

# MILL RIVER STUDY

REPORT PREPARED FOR THE CITY OF  
NORTHAMPTON, PLANNING DEPARTMENT

**Ford  
Gillen**

**Architects, Inc.**

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Amherst, MA 01002  
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Fax 413-256-1553

JUNE 27, 2005

## MILL RIVER STUDY

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5. STUDY C: OPTIONS FOR RESIDENTIAL AND COMMERCIAL MIX
6. STUDY D: OPTIONS FOR DEVELOPMENT EAST OF OLD SOUTH ST
7. GEOTECHNICAL REPORT

**Ford  
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**MILL RIVER STUDY**

June 27, 2005

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**SUMMARY STATEMENT:**

Ford Gillen Architects entered into a contract with the City of Northampton in December 2002 to provide feasibility options for development of the site between Pulaski Park and the Roundhouse parking area. The study was to include replacement and/or new parking, a minimum 18,000 s.f. building for potential use by the Council on Aging or other organizations in addition to an appropriate mix of commercial and residential use that could be supported in this location, as verified by current market analysis. After much consideration, the Council on Aging decided on another site. The final series of schemes presented are for development of a mix of commercial and residential space for lease and sale.

This report is grouped in three sections of proposals:

- A. Options that were generated to include a major parking deck component.
- B. Options that were generated specifically for senior center use considering several building sites and parking and at the ground floor building level only, with variations for future parking garage build-out of the existing Roundhouse parking.
- C. Options that continue to explore the relationship between commercial, residential, and parking vis a vis development proformas.
- D. Options that consider development east of Old South Street, to include extension of the Mill River and the bike path.

Also included is a geotechnical report and existing conditions photos.

**ZONING:**

Property is owned by the City and located in the Central Business District zone, subject to Downtown Design Guidelines established in 1998. The proposed building would have two ground floors, one at the Pulaski Park level (labeled in drawings as 'Ground Floor'), and one at the Roundhouse parking level (labeled as such). Parking required is (1) space per residential unit, (1) space per 500 s.f. commercial, retail, personal service, and restaurant kitchen, and (1) space per 4 restaurant seats. A total building height of 55 feet is allowed from 10' above the current Roundhouse parking level (average finished grade) or 45' above Pulaski Park to mean level of proposed hip roof.

**BUILDING CODE:**

The proposed schemes vary in gross square footage, up to 60,000 gsf, and up to 75' above the Roundhouse parking level (or 55' to top of ridge above Pulaski Park level). If the assumption is a fully sprinklered building with non-separated uses (this allows greatest flexibility for residential and commercial use), then the building construction classification would be Type 2, noncombustible.

MILL RIVER STUDY

## **CHAPTER 2:     Site Photos**

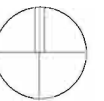
# MILL RIVER STUDY

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NORTH

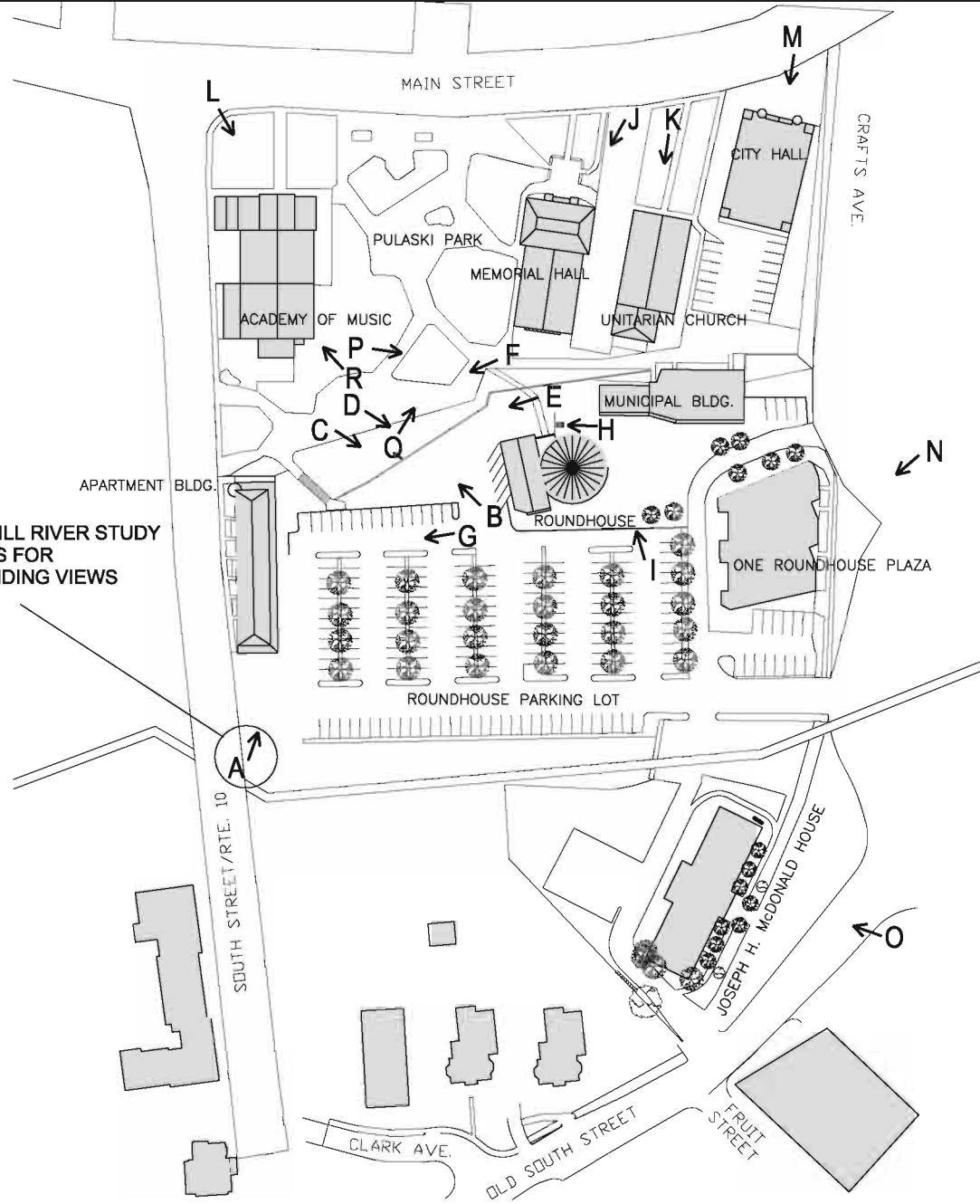


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| Title:                    |      |

KEY PLAN

**A.0**  
Drawing No.

REFER TO MILL RIVER STUDY  
SITE PHOTOS FOR  
CORRESPONDING VIEWS  
TYPICAL



**1  
A.0** KEY PLAN  
1" = 50'



**A**  
View from Route 10 across to  
SITE at back edge of Pulaski  
Park



**B**  
View from Roundhouse Parking lot  
to SITE at back of Pulaski Park  
and Academy of Music



**C**  
View from Pulaski Park southeast  
across Roundhouse Parking lot





**D**  
View from Pulaski Park looking  
east at 'fencing' edge of park



**E**  
View of 20' slope from Pulaski  
Park to Roundhouse Parking



**F**  
View from Pulaski Park looking  
west to Route 10



MILL RIVER STUDY  
Neighboring Building Photos, pp. 3

**G**  
Apartment Building at Rte.10  
Back facing Roundhouse  
Parking



**H**  
Bridge connecting Roundhouse  
to Pulaski Park



**I**  
View of Roundhouse (left) and  
Municipal building (right) from  
Roundhouse parking lot





MILL RIVER STUDY  
Neighboring Building Photos, pp. 4

**J**  
Memorial Hall  
Main Street



**K**  
Unitarian Universalist Church  
Main Street



**L**  
Academy of Music  
Main Street



MILL RIVER STUDY  
Neighboring Building Photos, pp. 5

**M**  
Front of City Hall, Main Street



**N**  
Back of City Hall  
Craft Street



**O**  
McDonald House, Senior Housing  
Old South Street





**P**  
View to Municipal Building



**Q**  
View toward Main Street,  
Memorial Hall on right



**R**  
View from Main Street  
Academy of Music face to Park

## **CHAPTER 3**

### **Study A: Options that were generated to include a major parking deck component: Schemes 1 thru 5**

#### **ASSUMPTIONS**

- The river will someday be restored, including the creation of a new bike path.
- Maximize the dramatic views from Pulaski Park, as well as view to the Roundhouse from the bridge on route 10.
- Provide 18,000 s.f. minimum building (for possible Senior Center or other use).
- Use of building beyond 18,000 s.f. could be residential.
- Provide 100 parking spaces, for use by Senior Center or other during day & by public at night (1 per residential unit, 1 per 500 s.f. commercial, retail & personal service).
- Provide public elevator access from Pulaski Park to the Roundhouse parking level.

#### **CONCLUSIONS**

- 'Garage' style building blocks too many views and is too close to residential block along route 10 with balconies on the Roundhouse parking lot.
- Reduce parking to 60 spaces.

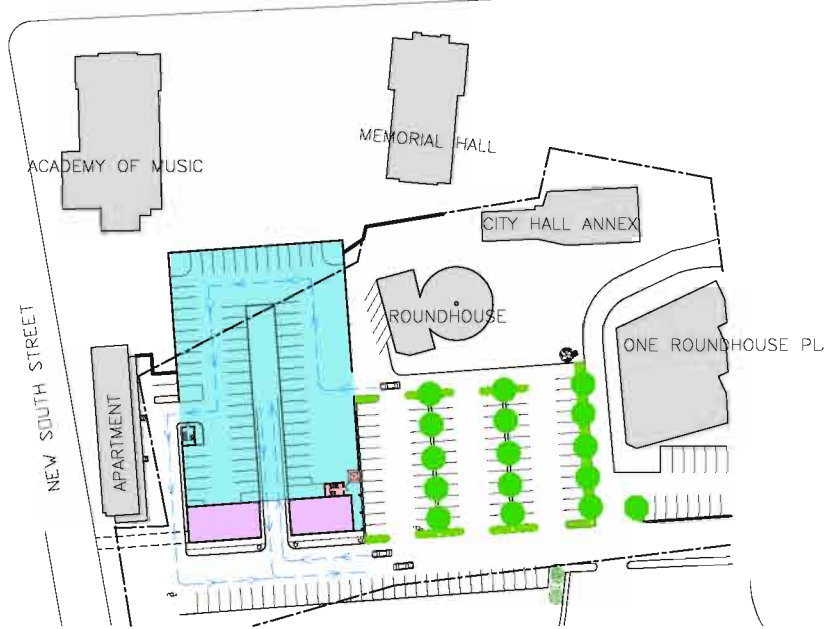


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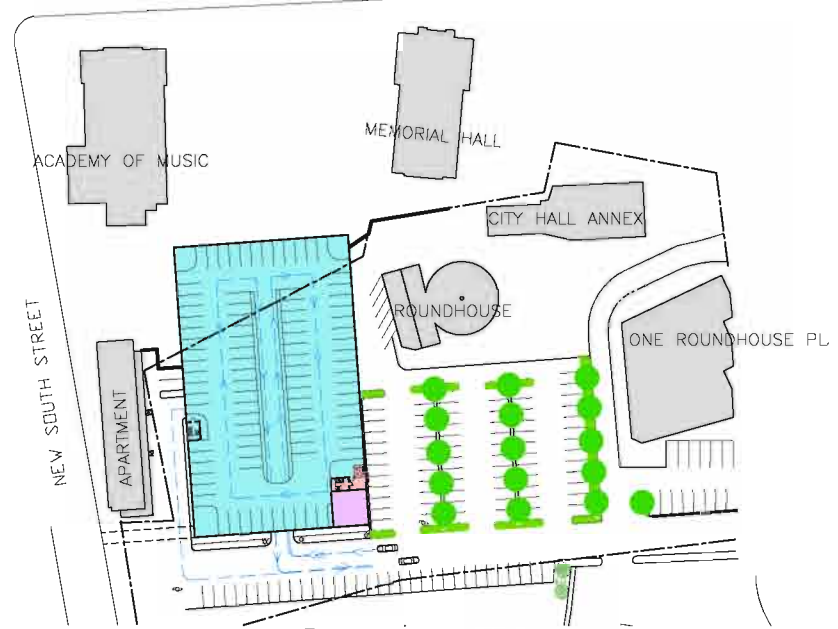
Northampton, MA

Owner:  
City of Northampton  
Director of Planning  
Wayne Fenton  
413-567-1265

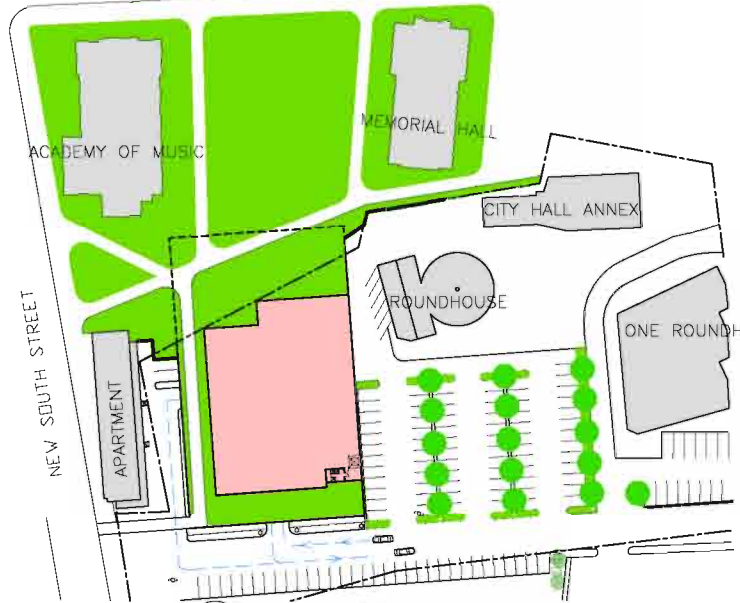
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1  
A.1  
**GROUND FLOOR**  
SCALE 1"=50'

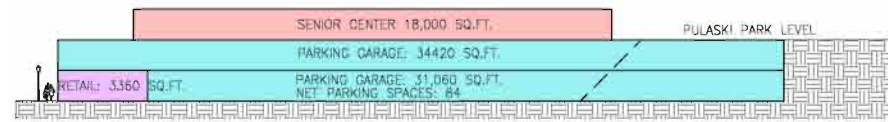


2  
A.1  
**SECOND FLOOR**  
SCALE 1"=50'



3  
A.1  
**THIRD FLOOR**  
SCALE 1"=50'

**NET PARKING SPACES: 84**



4  
A.1  
**BUILDING SECTION**  
SCALE 1"=20'

NORTH



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Date: 01/19/04  
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Title:

SCHEME 1

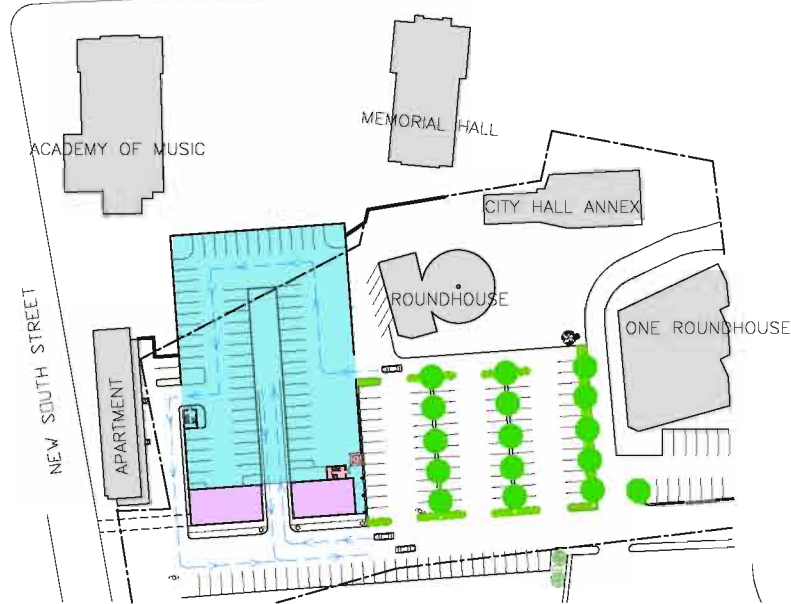
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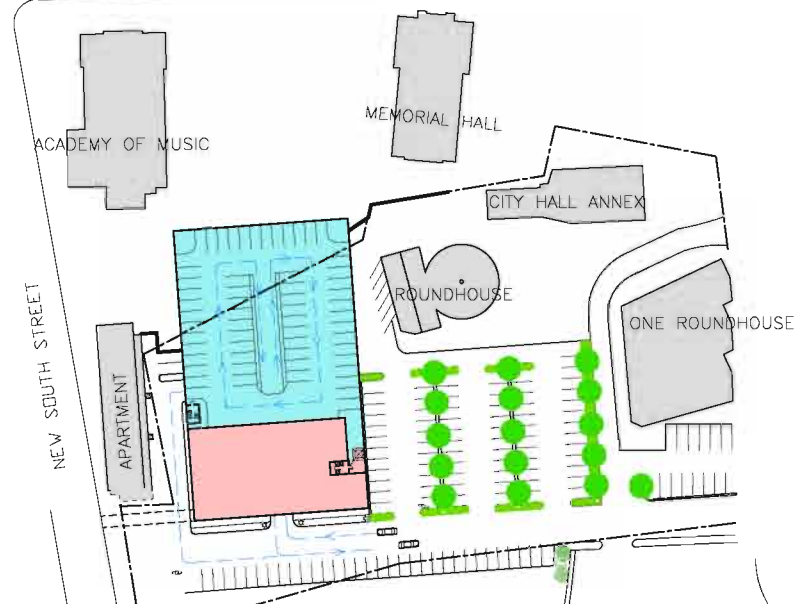
Northampton, MA

Owner:  
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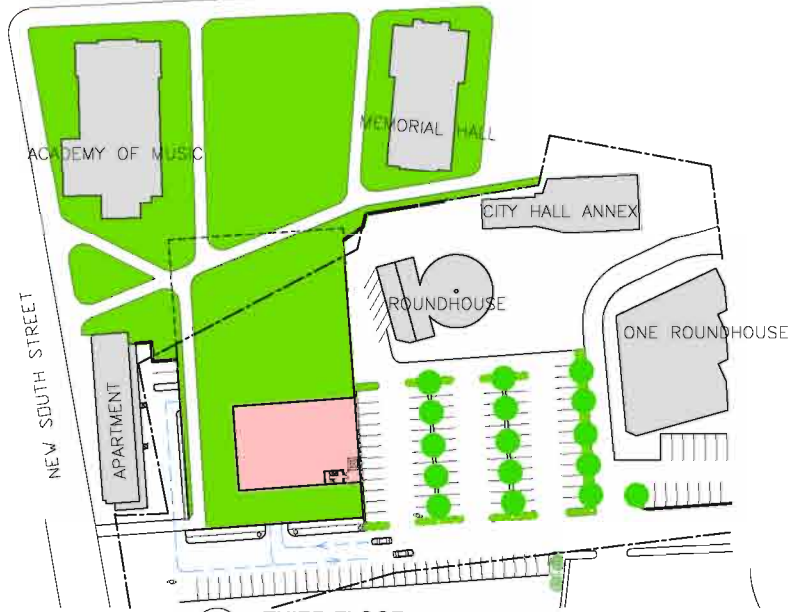
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1  
A.2 GROUND FLOOR  
SCALE 1"=50'



2  
A.2 SECOND FLOOR  
SCALE 1"=50'



3  
A.2 THIRD FLOOR  
SCALE 1"=50'

NET PARKING SPACES: 54



4  
A.2 BUILDING SECTION  
SCALE 1"=20'

NORTH



Rev. Date  
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Date: 8/19/04  
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Title:

SCHEME 2

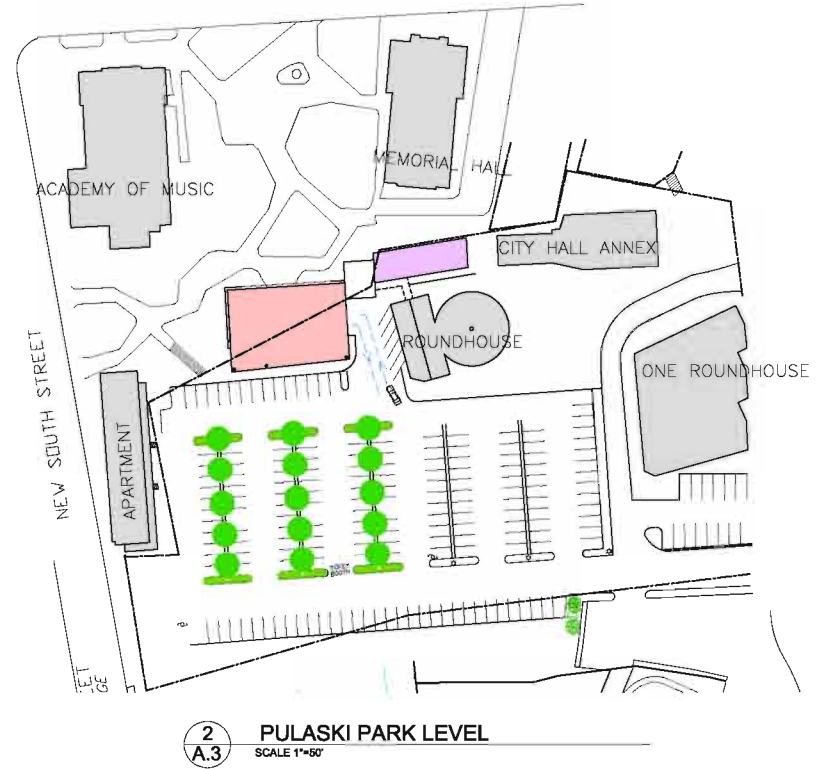
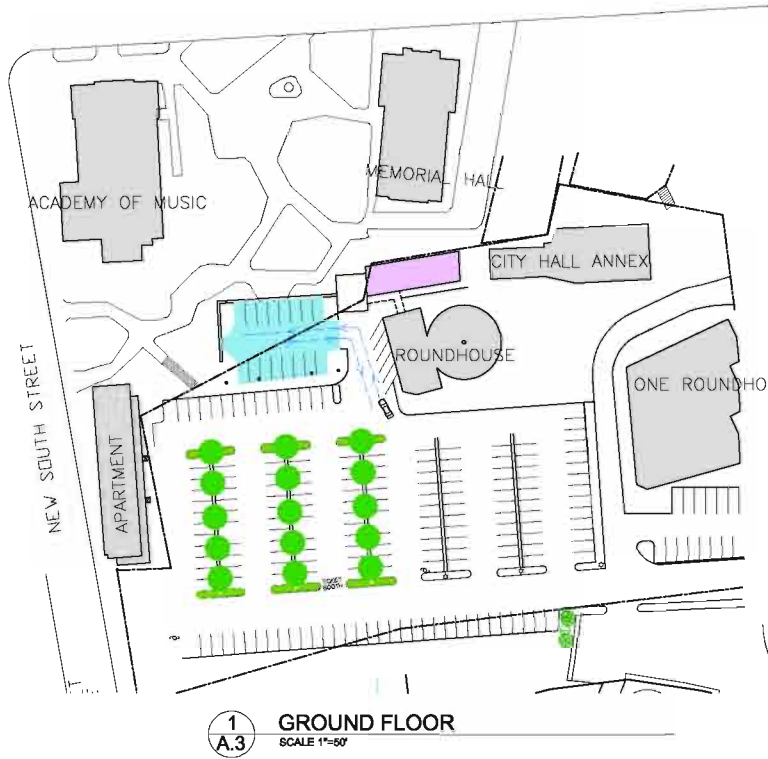
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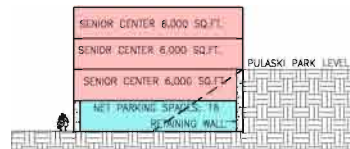
Northampton, MA

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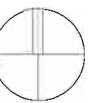


NET PARKING SPACES: 16



3  
A.3 BUILDING SECTION  
SCALE 1"=20'

NORTH



| Rev.                       | Date |
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SCHEME 3

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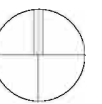
# MILL RIVER STUDY

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NORTH



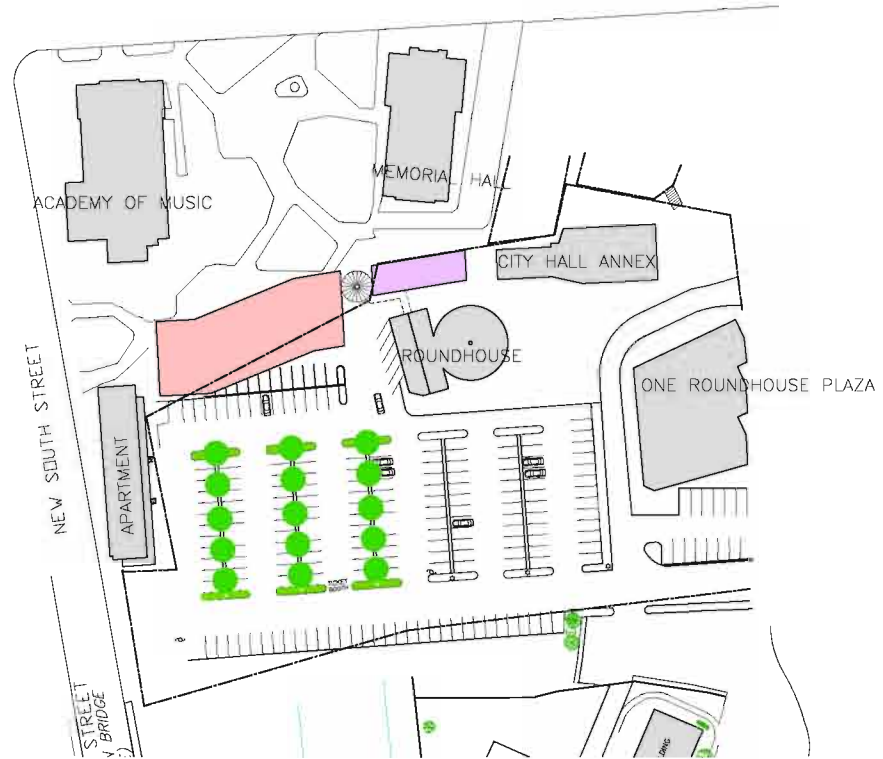
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SCHEME 4

**A.4**  
Drawing No.

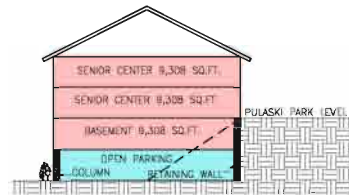


**1**  
**A.4** GROUND FLOOR  
SCALE 1"=50'



**2**  
**A.4** PULASKI PARK LEVEL  
SCALE 1"=50'

NET PARKING:26



**3**  
**A.4** SENIOR CENTER BUILDING SECTION  
SCALE 1"=20'



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Gillen  
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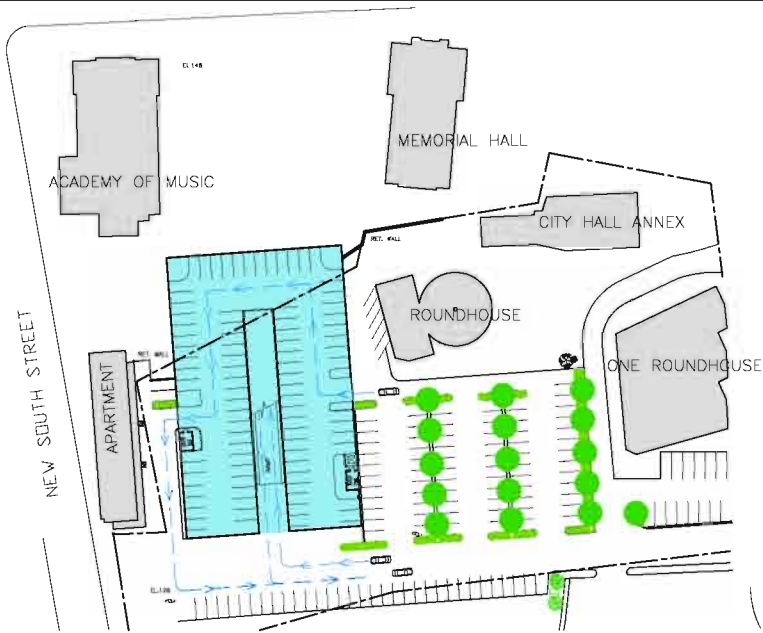
400 Main Street  
Amherst, MA 01002  
tel: 413-253-3529  
fax: 413-255-1553  
e-mail: fgo@fordgillen.com

NORTH

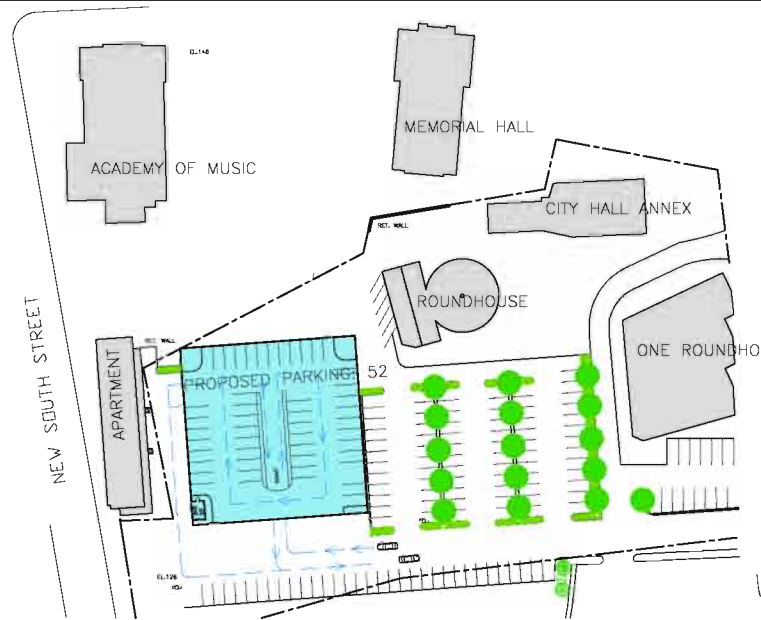
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SCHEME 5

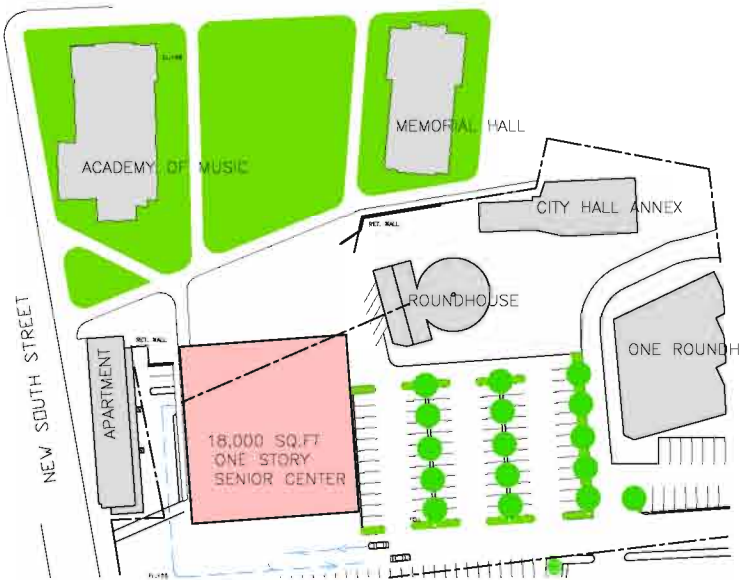
**A.5**  
Drawing No.



**1**  
**A.5** **GROUND FLOOR**  
SCALE 1"=50'



**2**  
**A.5** **SECOND FLOOR**  
SCALE 1"=50'



**3**  
**A.5** **TOP FLOOR**  
SCALE 1"=50'

NET PARKING: 52



**4**  
**A.5** **BUILDING SECTION**  
SCALE 1"=50'

## **CHAPTER 4**

### **Study B: Options that were generated specifically for Senior Center use Schemes 6 & 7, Parking Schemes 1 & 2**

#### **ASSUMPTIONS:**

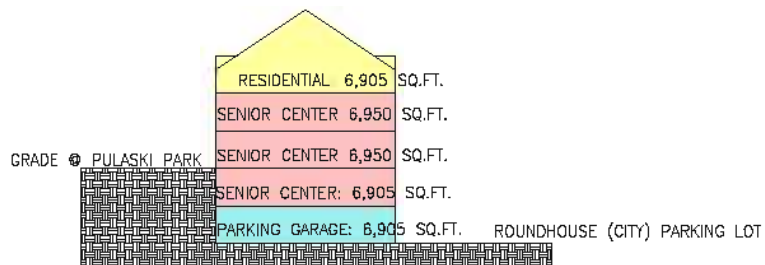
- Consider linear building(s) forming new south boundry of Pulaski Park, using the current chain link fence as the boundry (limit of the park).
- Provide drop off for Senior center, preferably at Pulaski Park level.
- Multi story (one, two, or three floors) Senior Center ok.
- Number of parking spaces can be minimal, what will fit under building at the Roundhouse Parking level.

#### **CONCLUSIONS:**

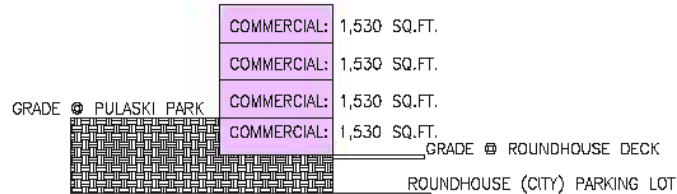
- Senior Center opted to not build on this site.
- Develop exterior urban spaces between buildings with stairs & plaza rather than elevator.
- The scale of a major building on Pulaski Park should be 3 stories minimum, 4 stories maximum, above grade at the park.

#### **PARKING SCHEMES:**

- The two schemes presented were developed with the assumption that the building proposed in scheme 7 were built. One option is to create an 'extension' of the park behind the building, the other is to create a 'bridge' link from the park to a new proposed parking garage located in the middle of the current parking lot.



**1 BUILDING 1 SECTION**  
 SCALE 1/16"=1'

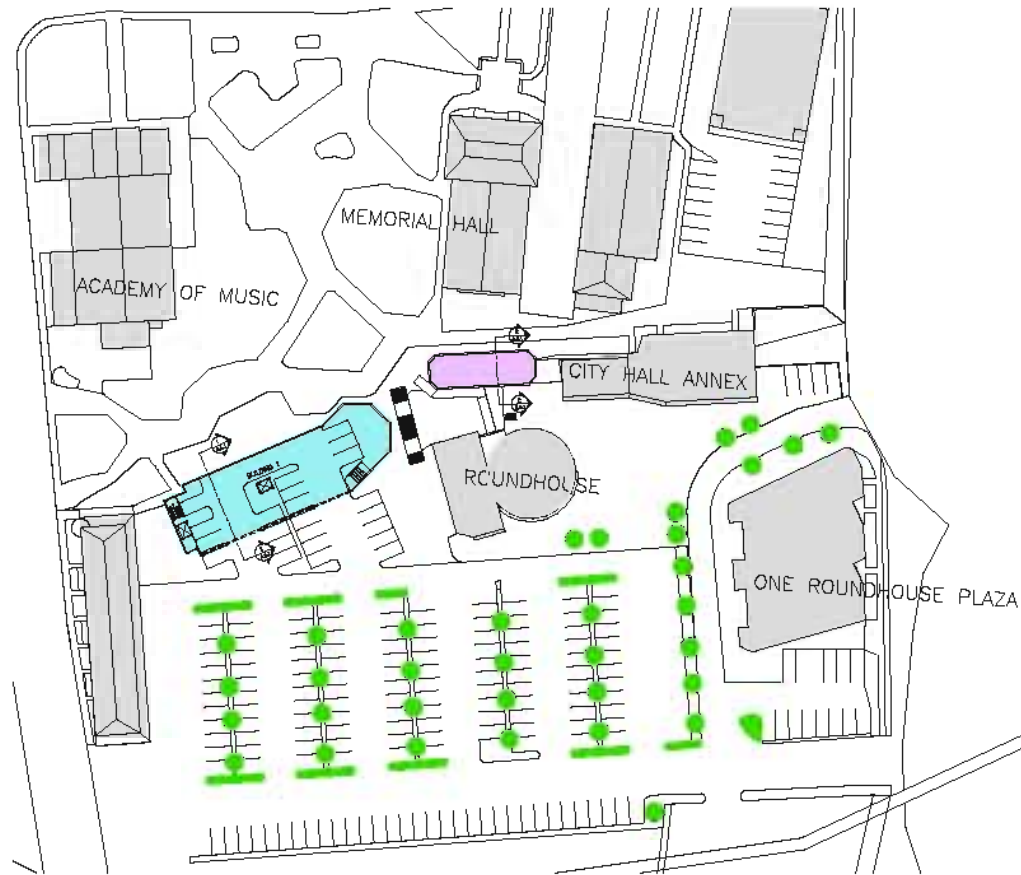


**2 BUILDING 2 SECTION**  
 SCALE 1/16"=1'

NOTE: EACH COMMERCIAL SPACE HAS OWN ENTRANCE AT GRADE.



**3 MODEL: PULASKI PARK VIEW**  
 NTD



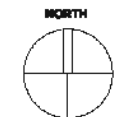
**4 SITE PLAN: PARKING LEVEL**  
 SCALE 1"=40'

**MILL RIVER  
 DEVELOPMENT  
 STUDY**  
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 Mayor's Office  
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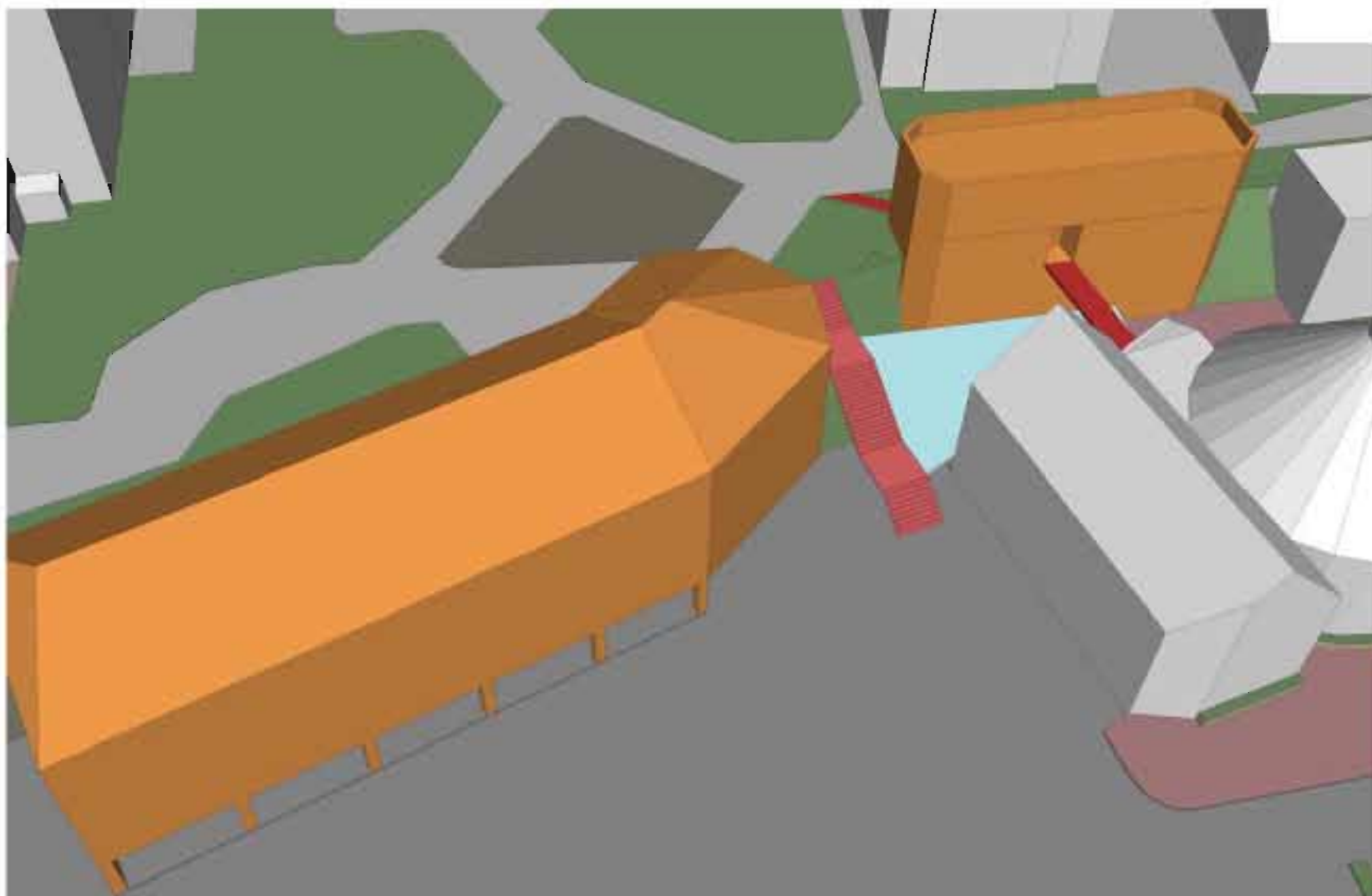


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| 6    | 01/10/04 |
| 7    | 01/10/04 |
| 8    | 01/10/04 |
| 9    | 01/10/04 |
| 10   | 01/10/04 |

**SCHEME 8  
 SITE PLAN &  
 SECTIONS**

**A.6.1**

Drawing No.



1  
A.6.2

MODEL: OPTION 1 ( BRIDGE THRU BUILDING)  
NTS

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Director of Planning  
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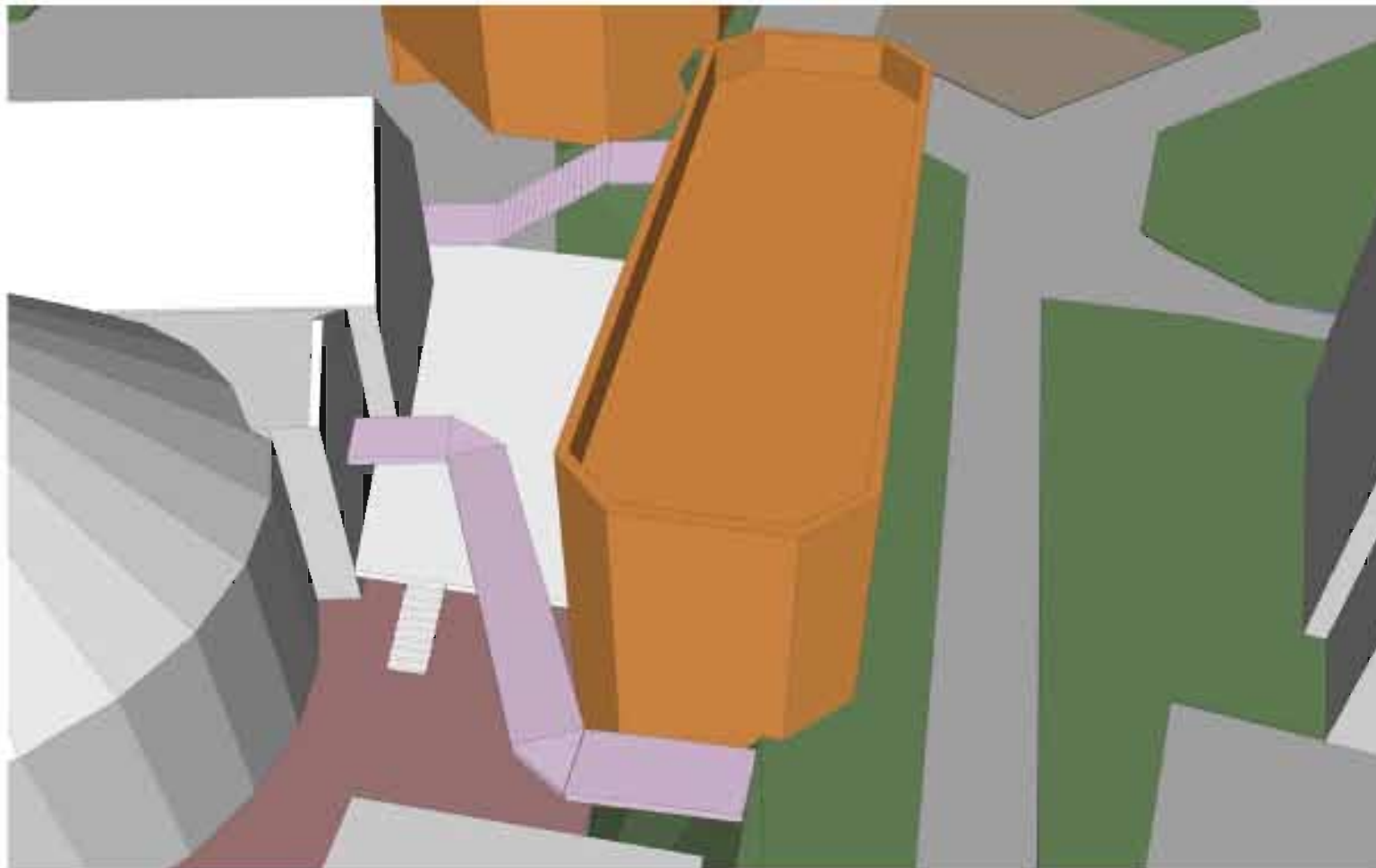
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SCHEME 6  
MODEL

A.6.2

Drawing No.





1  
A.6.3

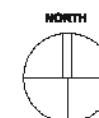
MODEL: OPTION 2 (BRIDGE ON SIDE OF BUILDING)  
NTA

# MILL RIVER DEVELOPMENT STUDY Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Vincent Tardella  
413-262-1288

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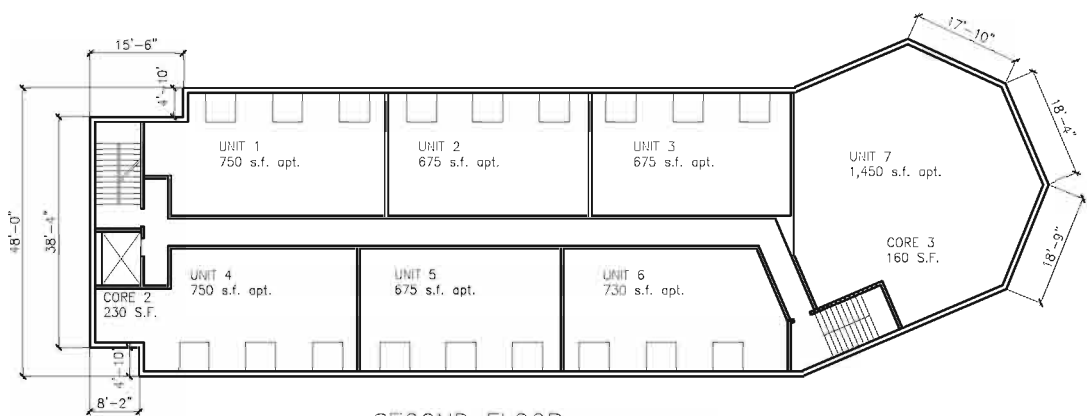
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SCHEME B  
MODEL

A.6.3

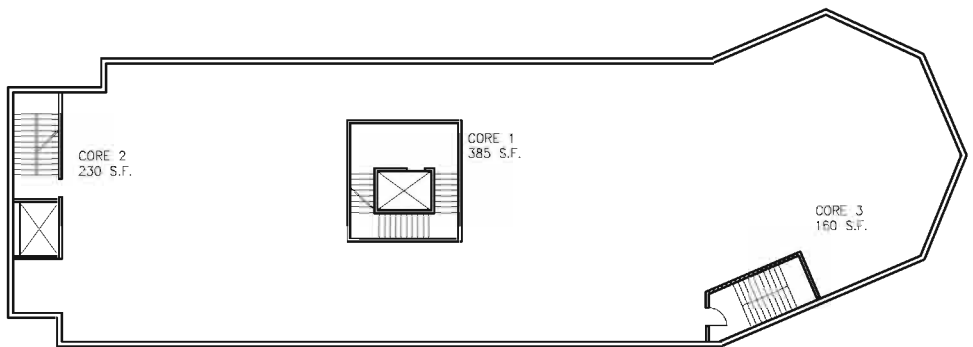
Drawing No.

5  
A.6.4  
SECOND FLOOR PLAN  
SCALE 1/32" = 1'-0"



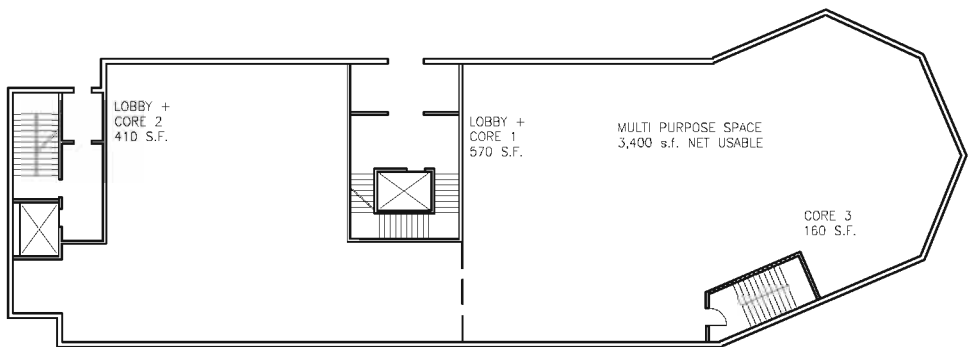
SECOND FLOOR  
5,705 s.f. NET RESIDENTIAL

4  
A.6.4  
FIRST FLOOR PLAN  
SCALE 1/32" = 1'-0"



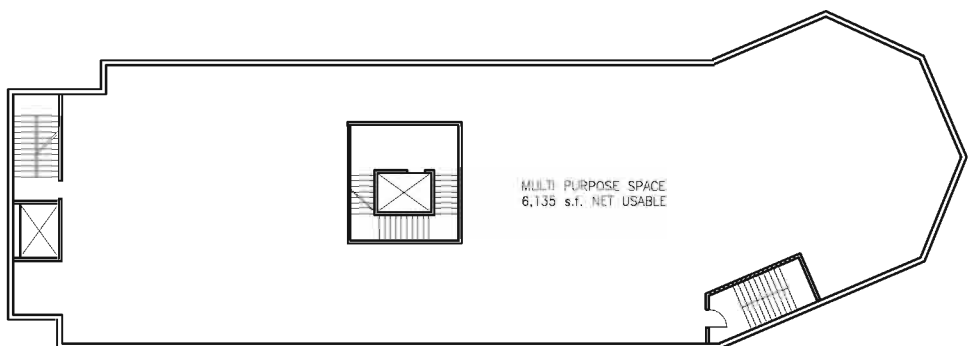
FIRST FLOOR  
6,135 s.f. NET USABLE

3  
A.6.4  
GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"



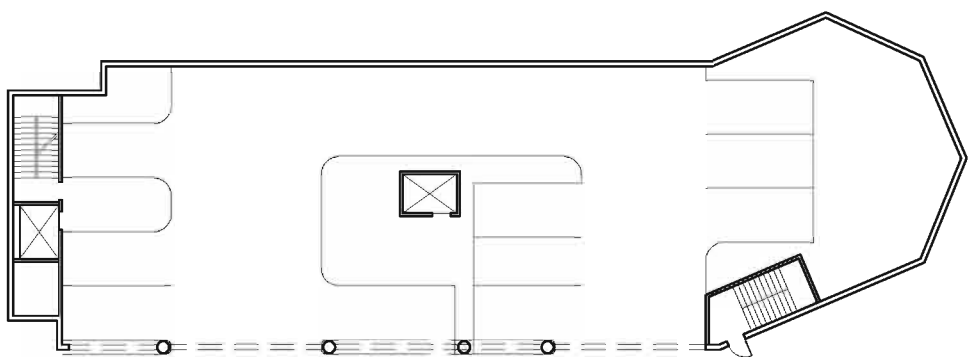
PULASKI PARK LEVEL (LOBBY)  
5,770 s.f. NET USABLE

2  
A.6.4  
SUB GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"



SUB GROUND FLOOR  
6,135 s.f. NET USABLE

1  
A.6.4  
ROUNDHOUSE PARKING LEVEL  
SCALE 1/32" = 1'-0"



PARKING GARAGE LEVEL  
6,371 s.f. NET USABLE

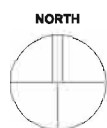
BLDG. GROSS = 36,170 S.F.  
BLDG. NET (INTERIOR) = 30,116 S.F.

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MILL RIVER STUDY  
NORTHAMPTON, MA

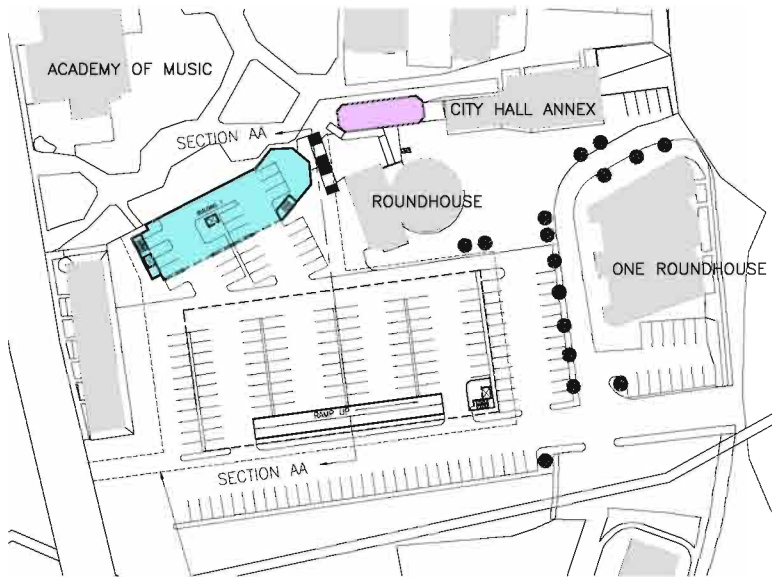
SCHEME 6: PLANS



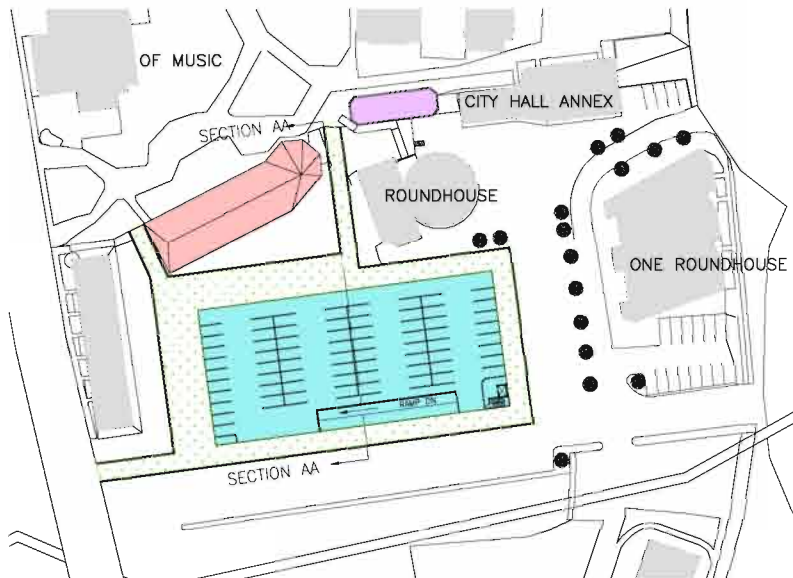
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A.6.4

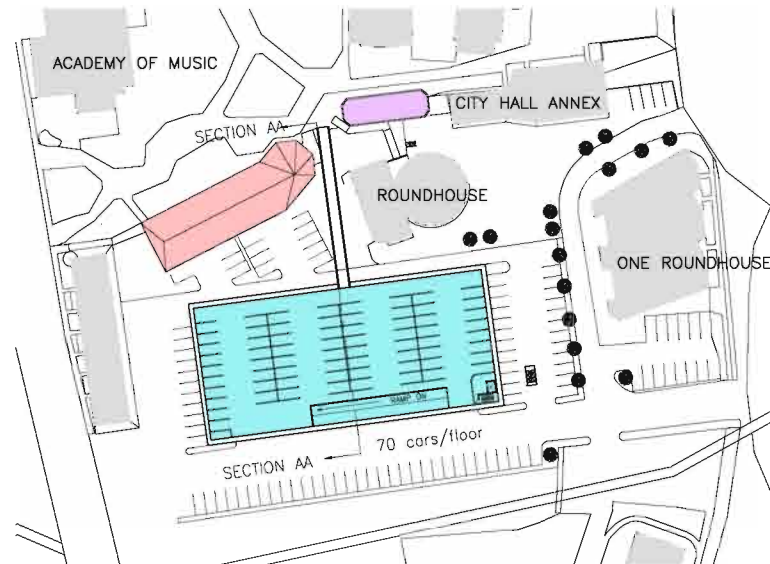
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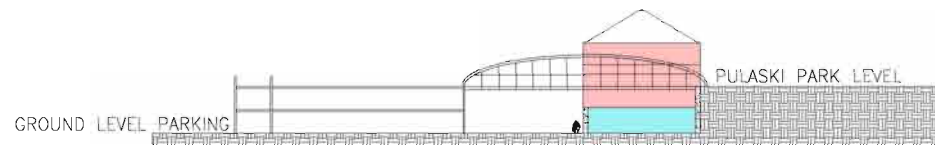
**1**  
P.1 **GROUND FLOOR LEVEL : SCHEME 1 & 2**  
SCALE TO FIT : 114 CARS ON THE SECOND LEVEL



**2**  
P.1 **PARK DECK LEVEL : SCHEME 2**  
SCALE TO FIT : 68 CARS THIS LEVEL



**4**  
P.1 **BIG GARAGE SCHEME 1**  
SCALE 1"=50'



**3**  
P.1 **SECTION AA**  
SCALE : TO FIT

# MILL RIVER PARKING GARAGE STUDY

Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Wayne Faldon  
413/253-1285

**Ford  
Gillen  
Architects, Inc.**

408 Main Street  
Amherst, MA 01002  
tel: 413-253-2528  
fax: 413-253-1503  
e-mail: fgoffice@fordgillen.com

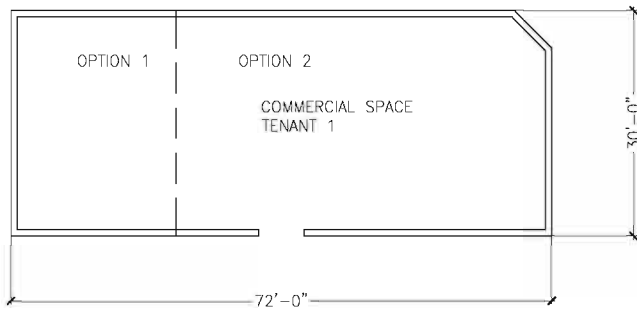
NORTH



Rev. Date  
Job No.: 2225  
Date: 01/18/04  
Scale: NTS  
File: 2225-CumulativeParking  
Title:

SCHEMES 1 AND 2

**P.1**  
Drawing No.



ROUNDHOUSE LEVEL

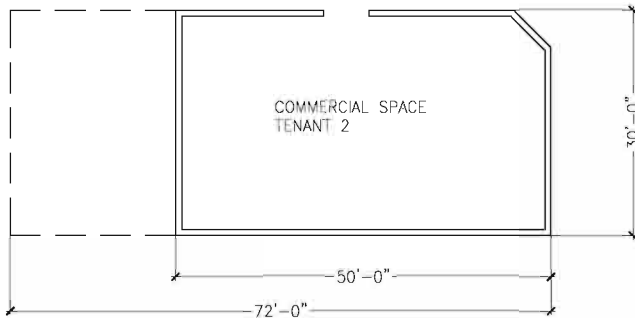
OPTION 1 BLDG. GROSS = 2,150 S.F. (BUILDING UNDER EXISTING BRIDGE)

OPTION 2 BLDG. GROSS = 1,490 S.F.

BUILDING NET (INTERIOR) = 1,360 S.F.

**1 BUILDING 2: GROUND FLOOR PLAN**

SCALE 1/8"=1'



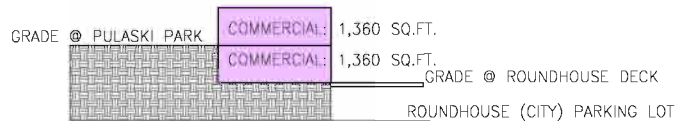
PARK LEVEL

BLDG. GROSS = 1,490 S.F.

BLDG. NET (INTERIOR) = 1,360 S.F.

**2 BUILDING 2: PARK LEVEL FLOOR PLAN**

SCALE 1/8"=1'



**3 BUILDING 2 SECTION**

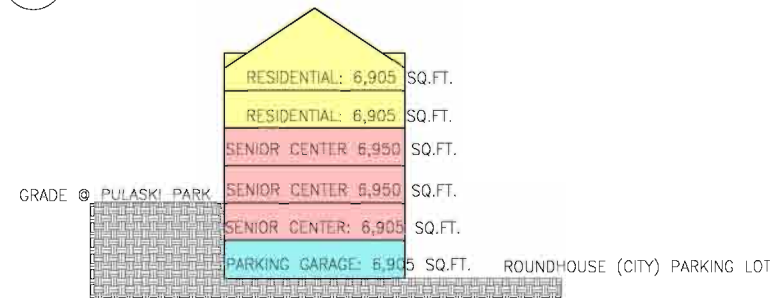
SCALE 1/16"=1'

NOTE: EACH COMMERCIAL SPACE HAS OWN ENTRANCE AT GRADE.



**5 SITE PLAN, PARKING LEVEL**

SCALE 1"=40'



**4 BUILDING 1 SECTION**

SCALE 1/16"=1'

**MILL RIVER  
DEVELOPMENT  
STUDY**

Northampton, MA

Owner

City of Northampton  
Director of Planning  
Wayne Fenton  
413-267-1285

**Ford  
Gillen**

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400 Main Street  
Amherst, MA 01002  
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NORTH



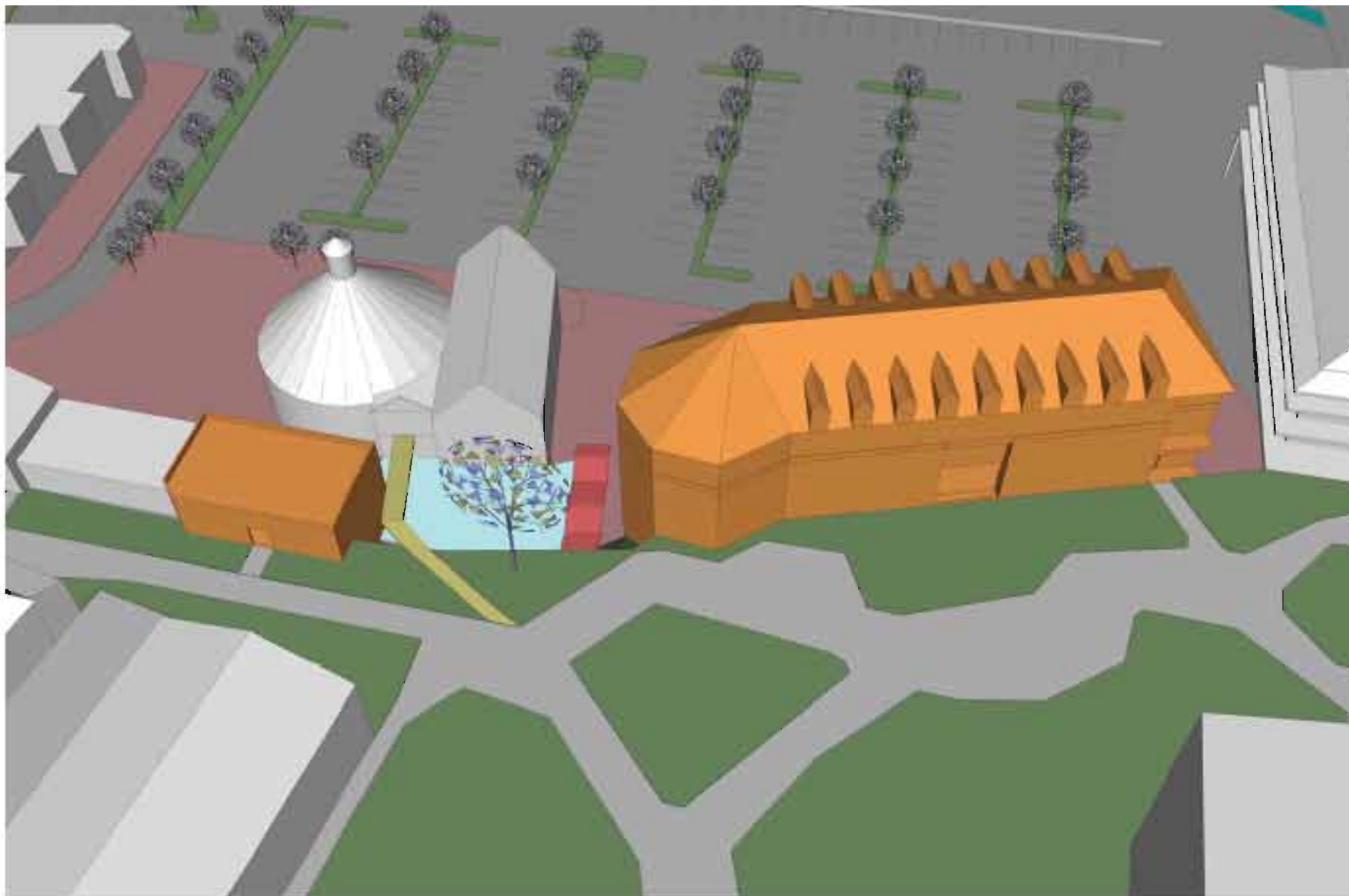
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|------|----------|
| 1    | 01/22/20 |
| 2    | 01/22/20 |
| 3    | 01/22/20 |
| 4    | 01/22/20 |
| 5    | 01/22/20 |
| 6    | 01/22/20 |
| 7    | 01/22/20 |
| 8    | 01/22/20 |
| 9    | 01/22/20 |
| 10   | 01/22/20 |

**SCHEME 7  
SITE PLAN &  
SECTIONS**

**A.7.1**

Drawing No.





1  
A.7.2

MODEL: PULASKI PARK TOP FRONT VIEW

NTB

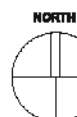
# MILL RIVER DEVELOPMENT STUDY

Northampton, MA

Client:  
City of Northampton  
Director of Planning  
Viggo Pihlak  
4/20/07 - 1/08

Ford  
Gillen  
Architects, Inc.

400 Main Street  
Northampton, MA 01060  
Tel: 413-253-5232  
Fax: 413-253-1308  
e-mail: fgm@fordgillen.com



| Rev.    | Date                 |
|---------|----------------------|
| Job No. | 0000                 |
| Date    | 07/00/04             |
| Drawn   | NTB                  |
| File    | 22222222222222222222 |

SCHEME 7  
MODEL & PLANS

# A.7.2

Drawing No.



1  
A.7.3

MODEL: PULASKI PARK TOP FRONT VIEW

NTS

# MILL RIVER DEVELOPMENT STUDY

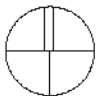
Northampton, MA

Owner:  
City of Northampton  
Director of Planning  
Wagner Feltus  
4/20/2017-1/2018

## Ford Gillen Architects, Inc.

408 Main Street  
Northampton, MA 01060  
Tel: 413-253-0000  
Fax: 413-253-5000  
e-mail: [fgill@fordgillen.com](mailto:fgill@fordgillen.com)

NORTH



|         |                      |
|---------|----------------------|
| Rev.    | By                   |
| Job No. | 0000                 |
| Date    | 8/20/04              |
| Scale   | NTS                  |
| File    | 002000_0000_0000.dwg |
| Title   |                      |

SCHEME 7  
MODEL

A.7.3

Drawing File



1  
A.7.4

MODEL: PULASKI PARK TOP FRONT VIEW

NTS

# MILL RIVER DEVELOPMENT STUDY

Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Project Folder  
4/28/07-1/2007

Ford  
Gillen  
Architects, Inc.

400 Main Street  
Northampton, MA 01062  
Tel: 413-253-8000  
Fax: 413-259-1000  
e-mail: fgm@fordgillen.com



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|-------------------------|------|
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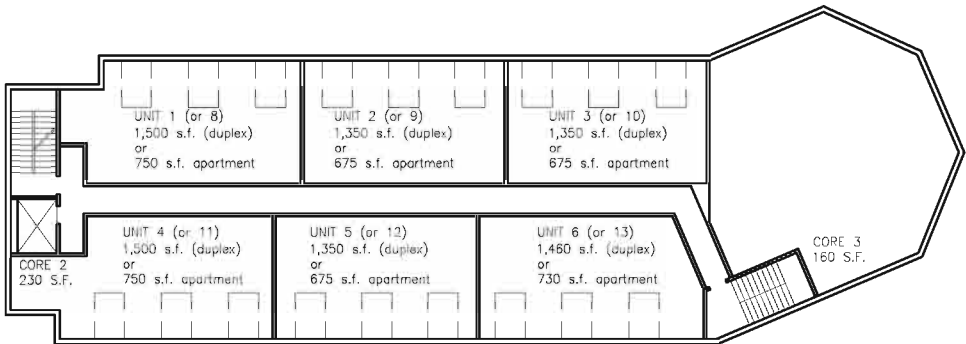
SCHEME 7  
MODEL

A.7.4

Drawing No.

6  
A.7.5

THIRD FLOOR PLAN  
SCALE 1/32" = 1'-0"

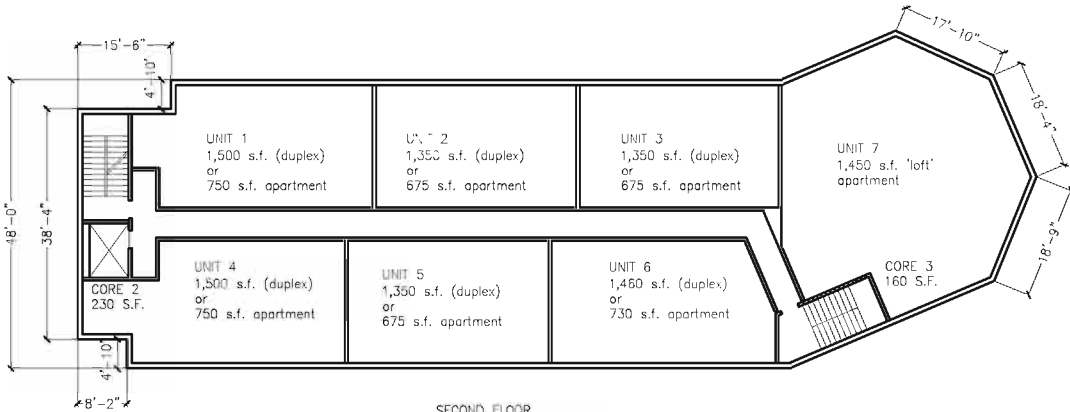


THIRD FLOOR  
4255 s.f. NET RESIDENTIAL

RESIDENTIAL SHOWN HERE AS (6) DUPLEX UNITS @ 1500 S.F.  
AND (1) 1450 S.F. LOFT APARTMENT  
OR  
(12) APARTMENT FLATS @ 700 S.F. EACH  
AND (1) 1450 S.F. LOFT APARTMENT

5  
A.7.5

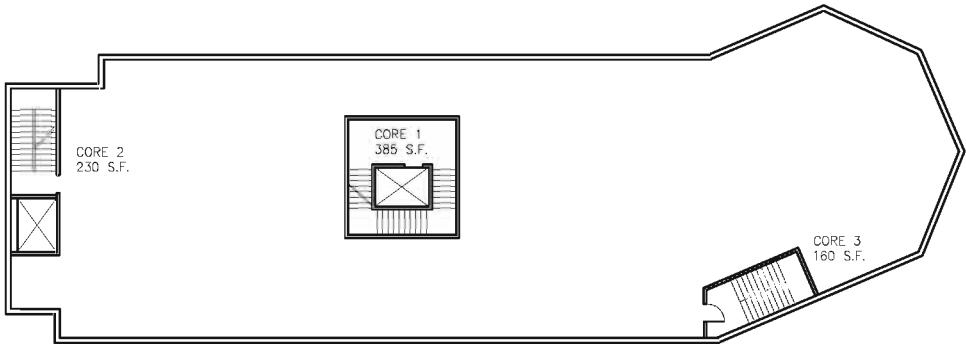
SECOND FLOOR PLAN  
SCALE 1/32" = 1'-0"



SECOND FLOOR  
5,705 s.f. NET RESIDENTIAL

4  
A.7.5

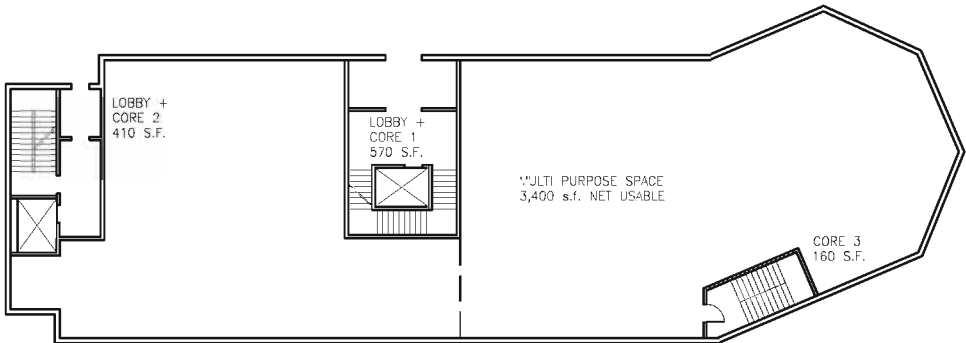
FIRST FLOOR PLAN  
SCALE 1/32" = 1'-0"



FIRST FLOOR  
6,135 s.f. NET USABLE

3  
A.7.5

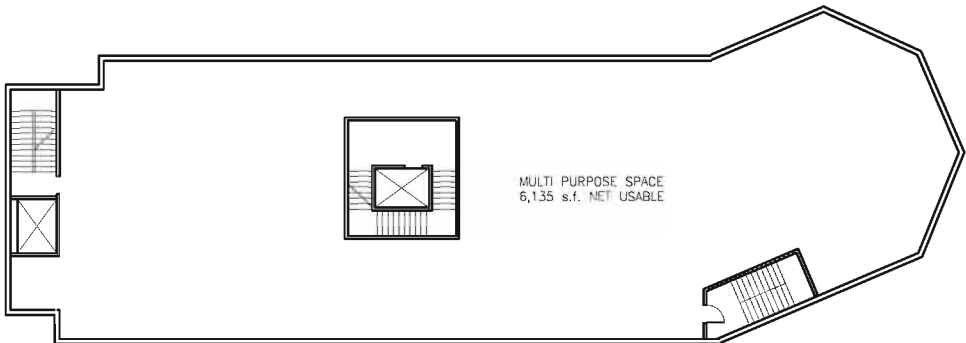
GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"



PULASKI PARK LEVEL (LOBBY)  
5,770 s.f. NET USABLE

2  
A.7.5

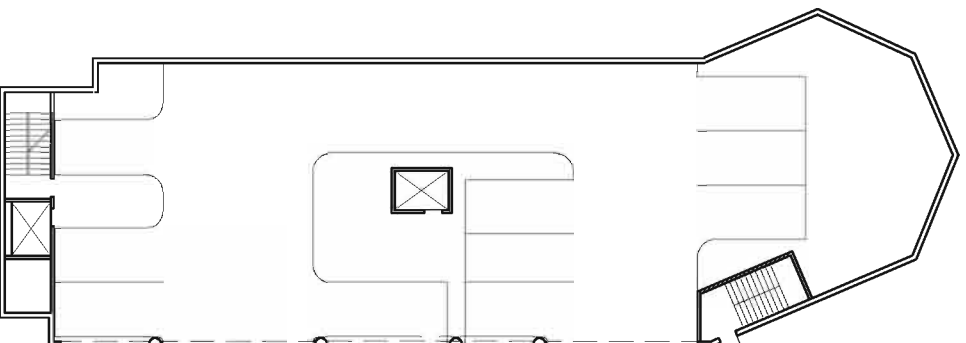
SUB GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"



SUB GROUND FLOOR  
6,135 s.f. NET USABLE

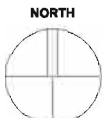
1  
A.7.5

ROUNDHOUSE PARKING LEVEL  
SCALE 1/32" = 1'-0"



PARKING GARAGE LEVEL  
6,371 s.f. NET USABLE

BLDG. GROSS = 43,170 S.F.  
BLDG. NET (INTERIOR) = 34,370 S.F.



| Rev.     | Date              |
|----------|-------------------|
| Job No.: | 2223              |
| Date:    | 6/18/04           |
| Scale:   | 1/32" = 1'-0"     |
| File:    | 2223/Current/DS/7 |





Ford  
Gillen

Architects, Inc.

409 Main Street  
Amherst, MA 01002  
Tel 413-253-2528  
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## SCHEME 7



### CONSTRUCTION COST ESTIMATE (progress 10-15-03)

#### 1. Shell Construction, including foundation, structure, exterior, electric & water service, building drainage

|                                   |               |                    |
|-----------------------------------|---------------|--------------------|
| (6) floors @ 7,200 s.f. per floor | = 43,200 s.f. |                    |
| allow \$120 / s.f. (non-union)    |               | = \$5,184,000      |
| add (1) 4 stop elevator @         |               | 80,000             |
| add (1) 6 stop elevator @         |               | 100,000            |
| add (2) fire stairs               |               | 65,000             |
|                                   | subtotal      | <b>\$5,430,000</b> |

#### 2. Fit Out Cost / Commercial

|                  |                              |                      |
|------------------|------------------------------|----------------------|
| lighting & power | @ \$ 8.00 / s.f.             |                      |
| HVAC             | @ \$12.00 / s.f.             |                      |
| plumbing         | @ \$10.00 / s.f.             |                      |
| fire alarm       | @ \$ 5.00 / s.f.             |                      |
| finishes         | @ \$30.00 / s.f.             |                      |
| sprinklers       | @ \$ 5.00 / s.f.             |                      |
| total            | \$70.00 / s.f. x 18,040 s.f. | = <b>\$1,263,000</b> |

total **\$6,693,000**

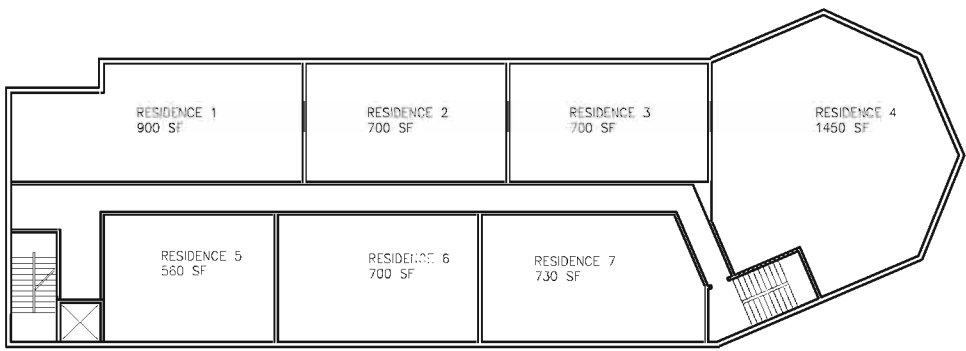
## CHAPTER 5

### Study C: Options for Residential and Commercial mix Schemes 8 - 12

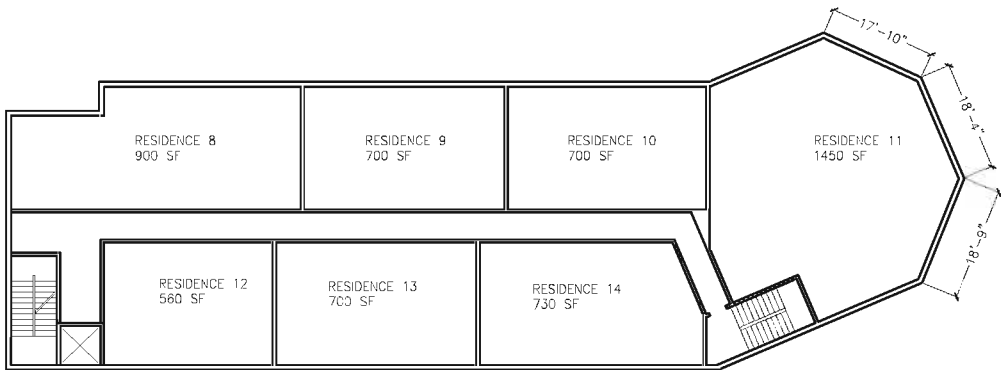
#### SUMMARIES:

- Scheme 8: assume 6 story building (4 stories above grade at Pulaski Park),  
30 parking spaces at Roundhouse parking level (30 required),  
25 residential apartments ranging from 560 s.f. to 1,450 s.f., and 6,000 s.f.  
ground floor commercial
- Scheme 9: assume 5 story building (3 stories above grade at Pulaski Park),  
60 parking spaces provided, 72 req'd if all restaurant  
1 per 500 s.f. commercial, retail, & personal service = 18 spaces  
1 per 4 seats restaurant, 200 seats per 10,000 gsf = 50 spaces  
1 per 500 s.f. kitchen = 4 spaces  
consider cost of parking structure, clearspan (allows greatest # of parking  
spaces, foundation piers on bedrock with continuous grade beam) vs.  
structural grid (individual footings)
- Scheme 10: Modifications in response to review with Michael Sissman;  
larger residential units  
restaurant incompatible with high end residential  
provide retail basement (but not part of sale/s.f. price)  
same as scheme 9, all residential and commercial, no restaurant
- Scheme 11: Modifications in response to review with Michael Sissman & Steve Brunelle,  
the best market for this site is high end residential because of location,  
demand, parking & elevator.  
provide mix of 2 story townhouses (3 bedrooms) and empty nester  
apartments (800 - 1200 s.f. ea) with 5 retail condos at Pulaski Park level.
- Scheme 12: Same as scheme 11 with addition of ramp down to basement parking level for  
total of 57 parking spaces.  
Issues to be resolved; locating area for service/loading, extent of and cost  
of parking, location of HVAC compressors, development of urban spaces.  
Height from park level to top of hip roof is 45'-6", and height to roof eave  
is 30'-0".

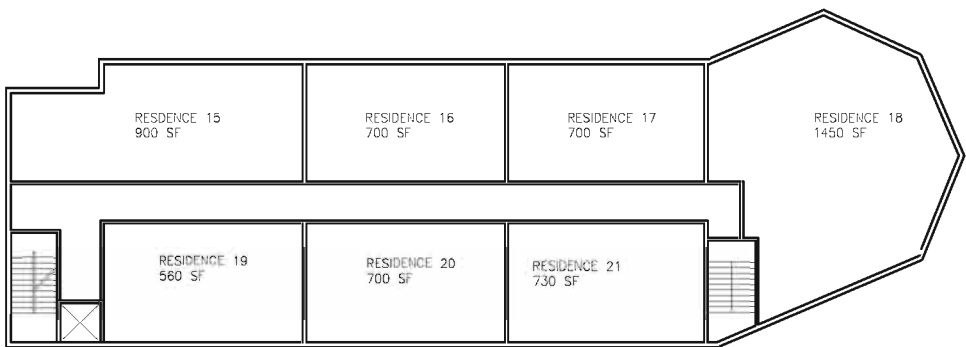
6  
A.8  
THIRD FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5740 NET SF



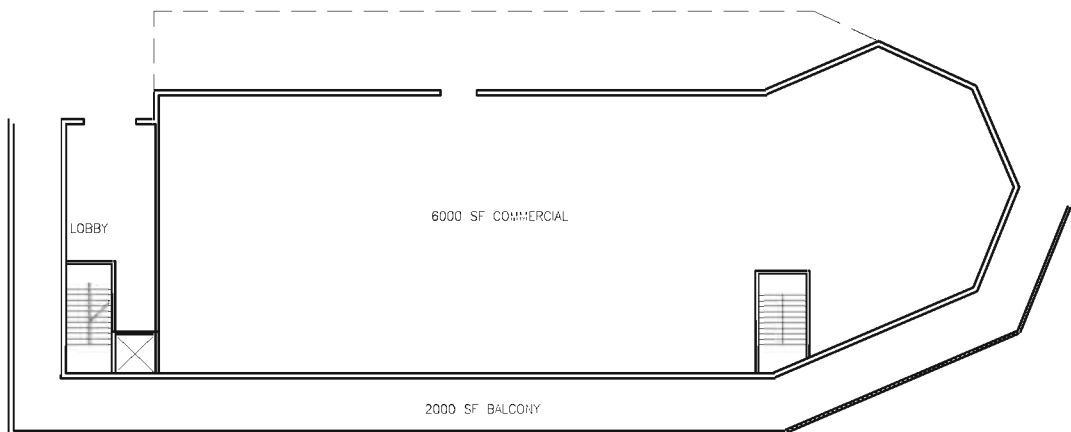
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SECOND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5740 NET SF



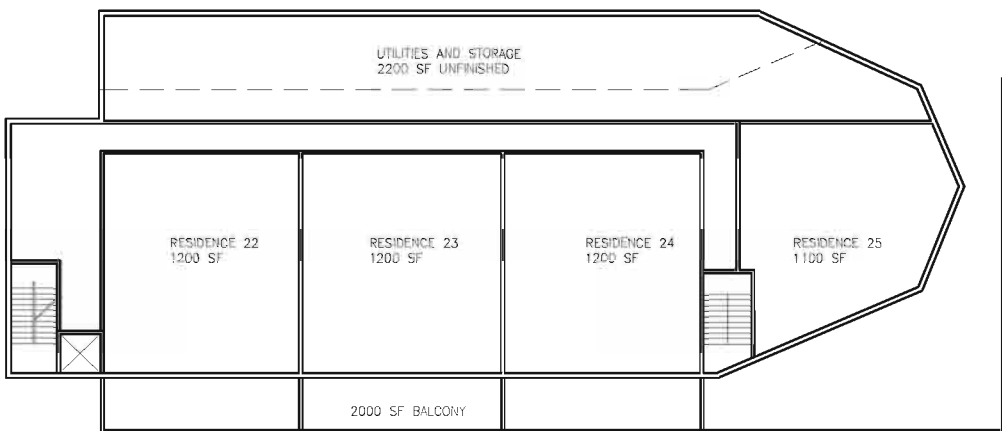
4  
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FIRST FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5740 NET SF



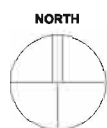
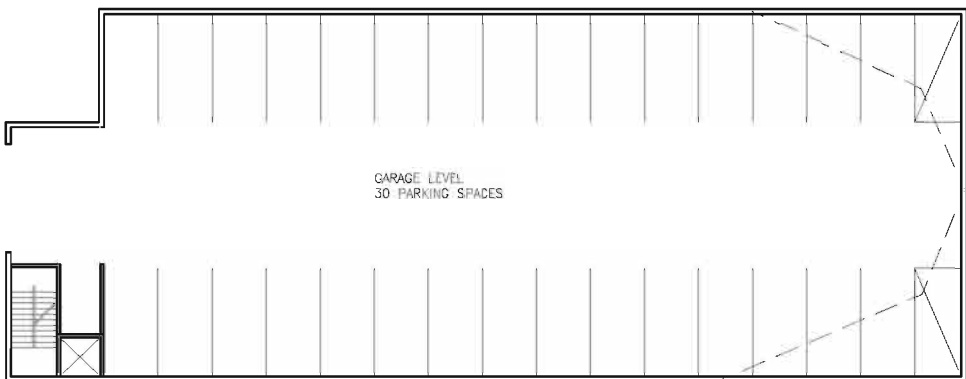
3  
A.8  
GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
6000 NET SF  
(+ 2000 SF BALCONY)



2  
A.8  
SUB GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
4700 NET SF  
2200 SF UNFINISHED  
(+ 2000 SF BALCONY)



1  
A.8  
ROUNDHOUSE PARKING LEVEL  
SCALE 1/32" = 1'-0"  
9628 GROSS SF  
9065 NET SF

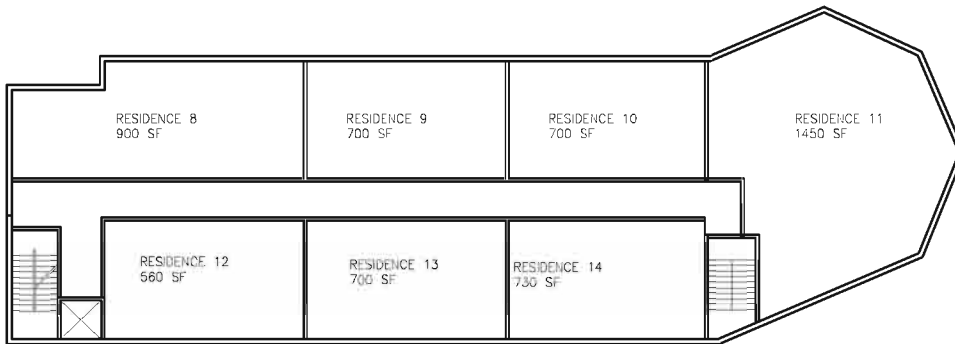


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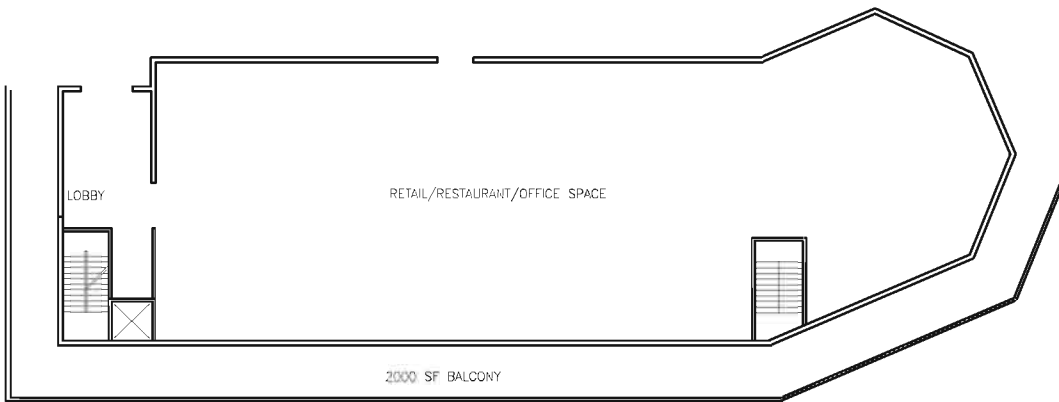
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A.9  
SECOND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5740 NET SF



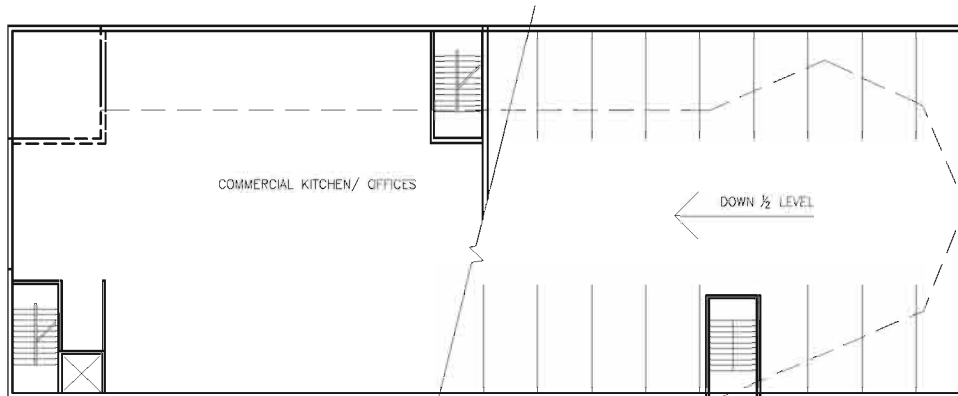
4  
A.9  
FIRST FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5740 NET SF



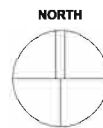
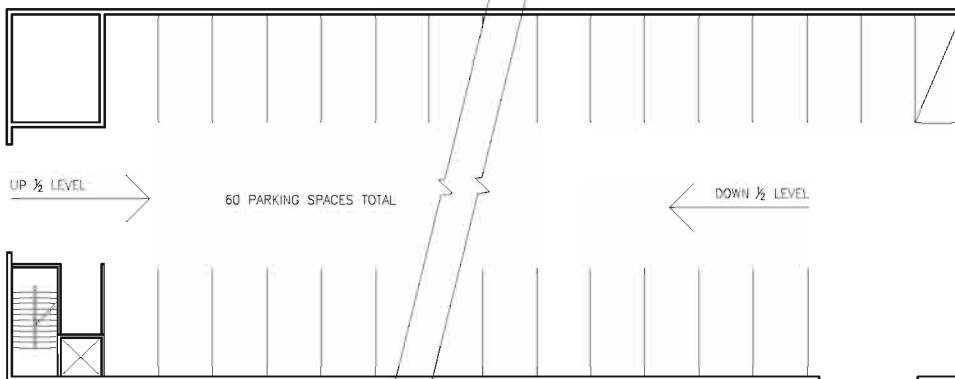
3  
A.9  
GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
6000 NET SF  
(+ 2000 SF BALCONY)



2  
A.9  
SUB GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
9626 GROSS SF

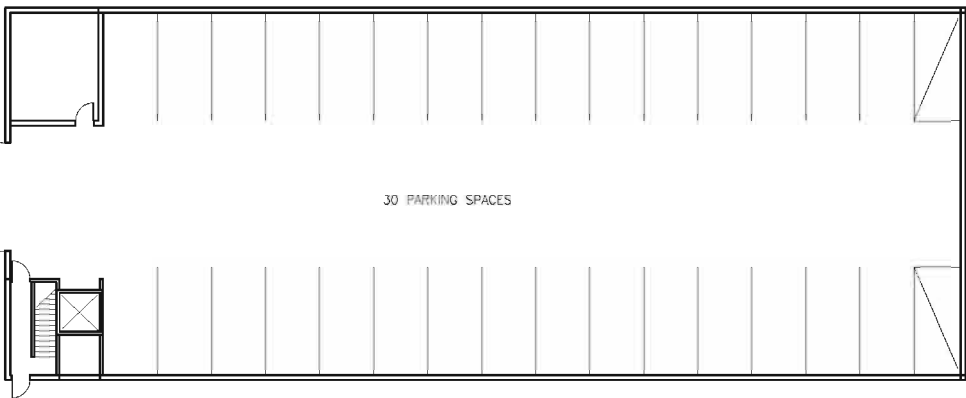
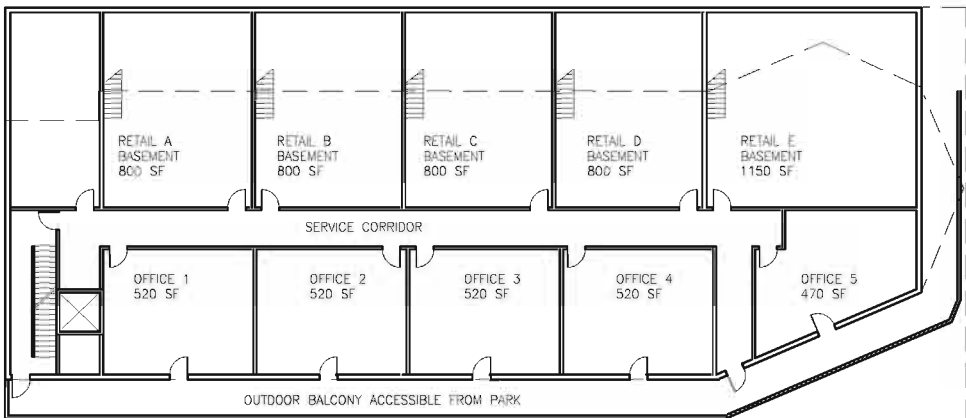
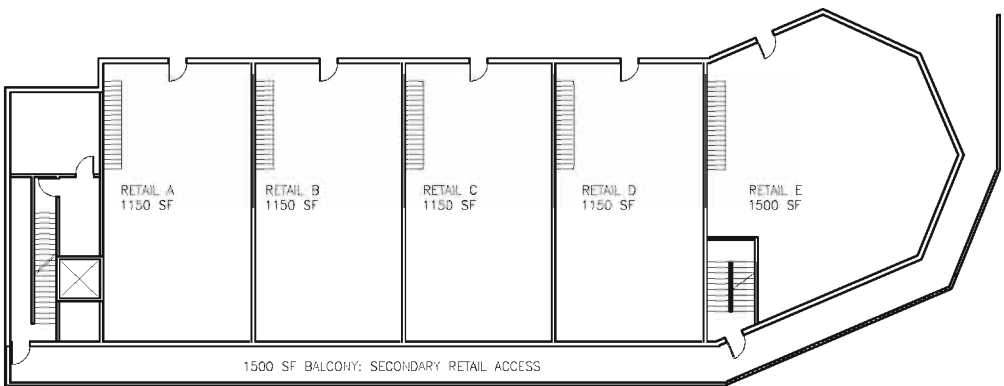
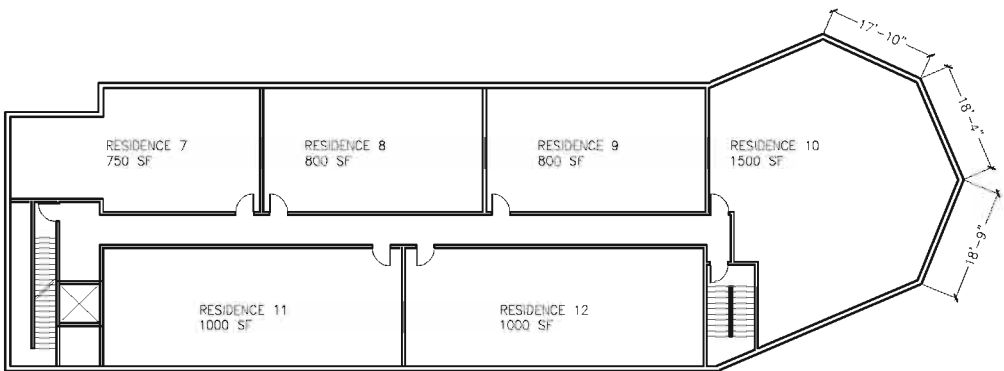
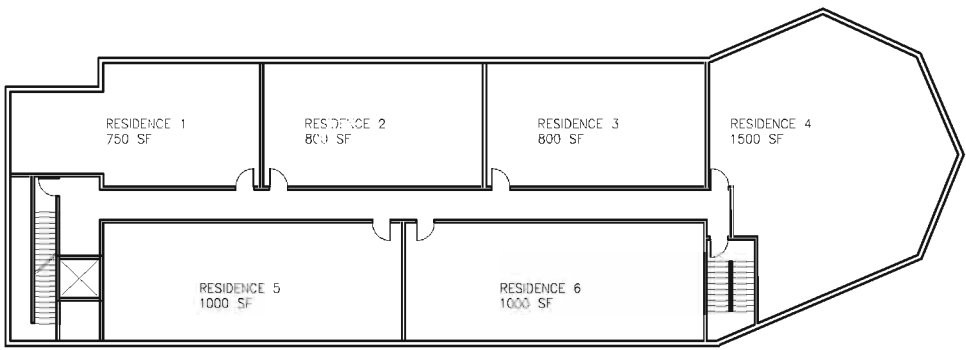


1  
A.9  
ROUNDHOUSE PARKING LEVEL  
SCALE 1/32" = 1'-0"  
9626 GROSS SF



| Rev.     | Date              |
|----------|-------------------|
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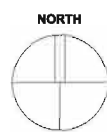
**5**  
**A.10**  
**SECOND FLOOR PLAN**  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5850 NET SF

**4**  
**A.10**  
**FIRST FLOOR PLAN**  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
5850 NET SF

**3**  
**A.10**  
**GROUND FLOOR PLAN**  
SCALE 1/32" = 1'-0"  
73000 GROSS SF  
6100 NET SF  
(+ 1500 SF BALCONY)

**2**  
**A.10**  
**SUB GROUND FLOOR PLAN**  
SCALE 1/32" = 1'-0"  
9700 GROSS SF  
4350 NET SF (RETAIL BASEMENT)  
2550 NET SF (OFFICE)  
(+ 1500 SF BALCONY)

**1**  
**A.10**  
**ROUNDHOUSE PARKING LEVEL**  
SCALE 1/32" = 1'-0"  
9626 GROSS SF  
9065 NET SF



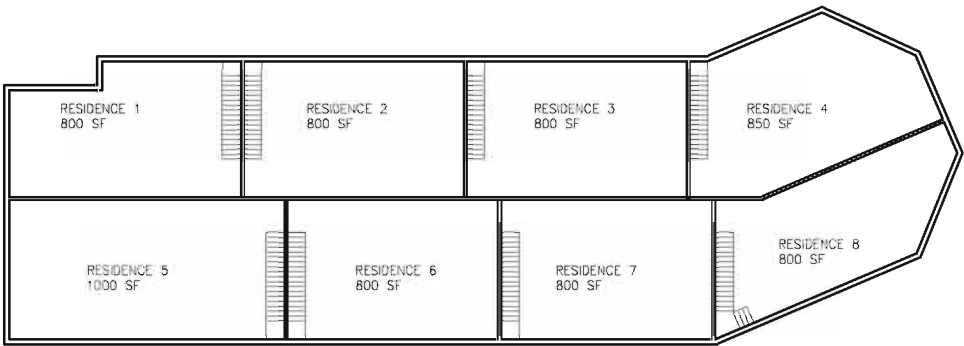
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5  
A.11

SECOND FLOOR PLAN

SCALE 1/32" = 1'-0"

7300 GROSS SF



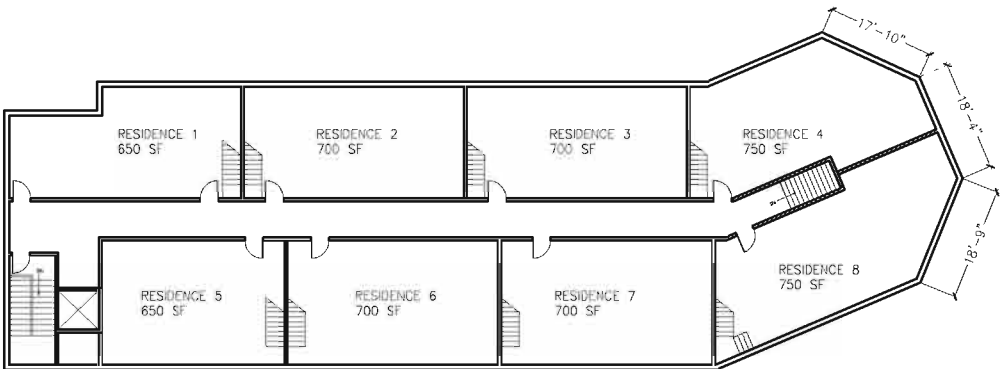
12,450 NET SF (2 STORY RESIDENTIAL TOWNHOUSES)

4  
A.11

FIRST FLOOR PLAN

SCALE 1/32" = 1'-0"

7300 GROSS SF

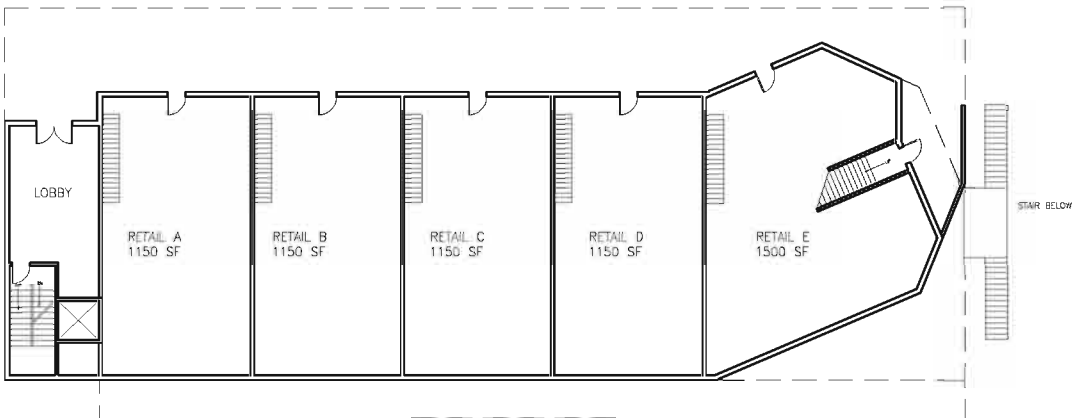


3  
A.11

GROUND FLOOR PLAN

SCALE 1/32" = 1'-0"

7300 GROSS SF  
6100 NET SF

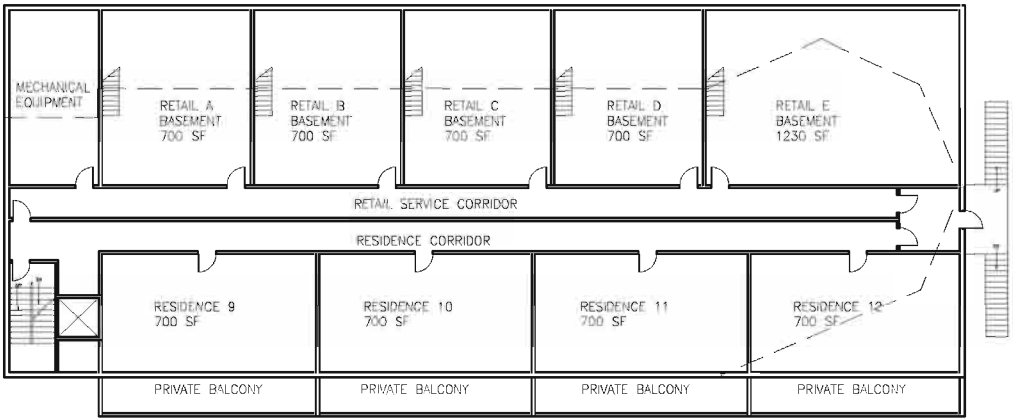


2  
A.11

SUB GROUND FLOOR PLAN

SCALE 1/32" = 1'-0"

9626 GROSS SF  
4030 NET SF (RETAIL BASEMENT)  
2800 NET SF (RESIDENTIAL)  
(+ 850 SF BALCONY)

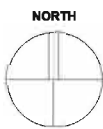
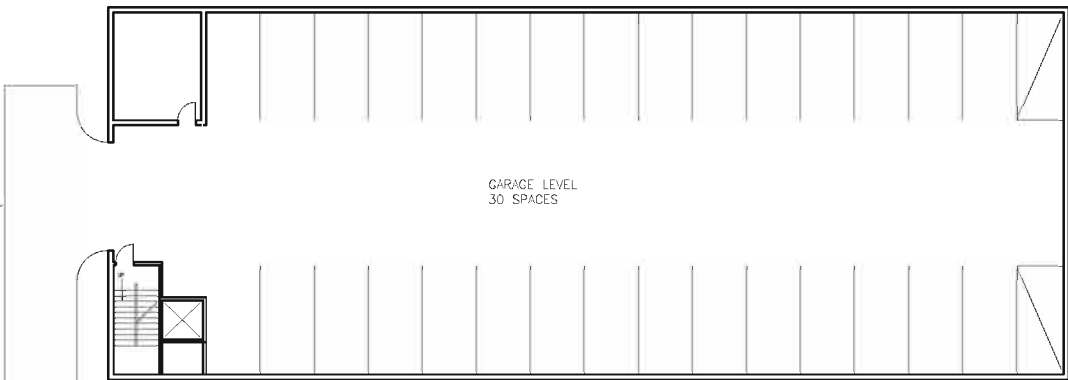


1  
A.11

ROUNDHOUSE PARKING LEVEL

SCALE 1/32" = 1'-0"

9626 GROSS SF  
9065 NET SF



| Rev.     | Date               |
|----------|--------------------|
| Job No.: | 2223               |
| Date:    | 6/18/04            |
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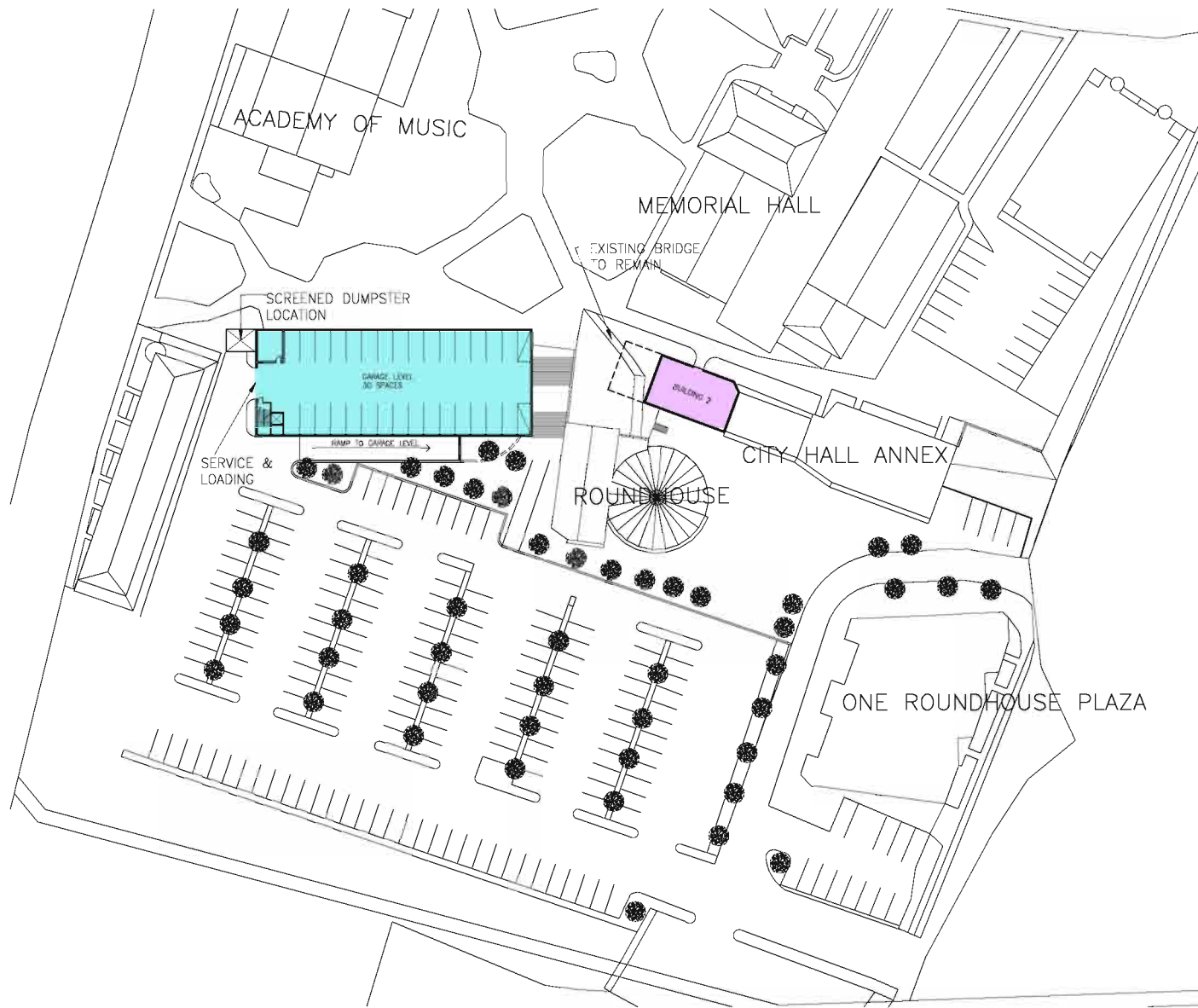
**MILL RIVER  
DEVELOPMENT  
STUDY**

Northampton, MA

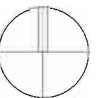
Owner  
City of Northampton  
Director of Planning  
Wayne Fekken  
413/257-1255

**Ford  
Gillen  
Architects, Inc.**

409 Main Street  
Amherst, MA 01002  
tel: 413-253-2528  
fax: 413-255-1553  
e-mail: fgarcia@fordgillen.com



NORTH

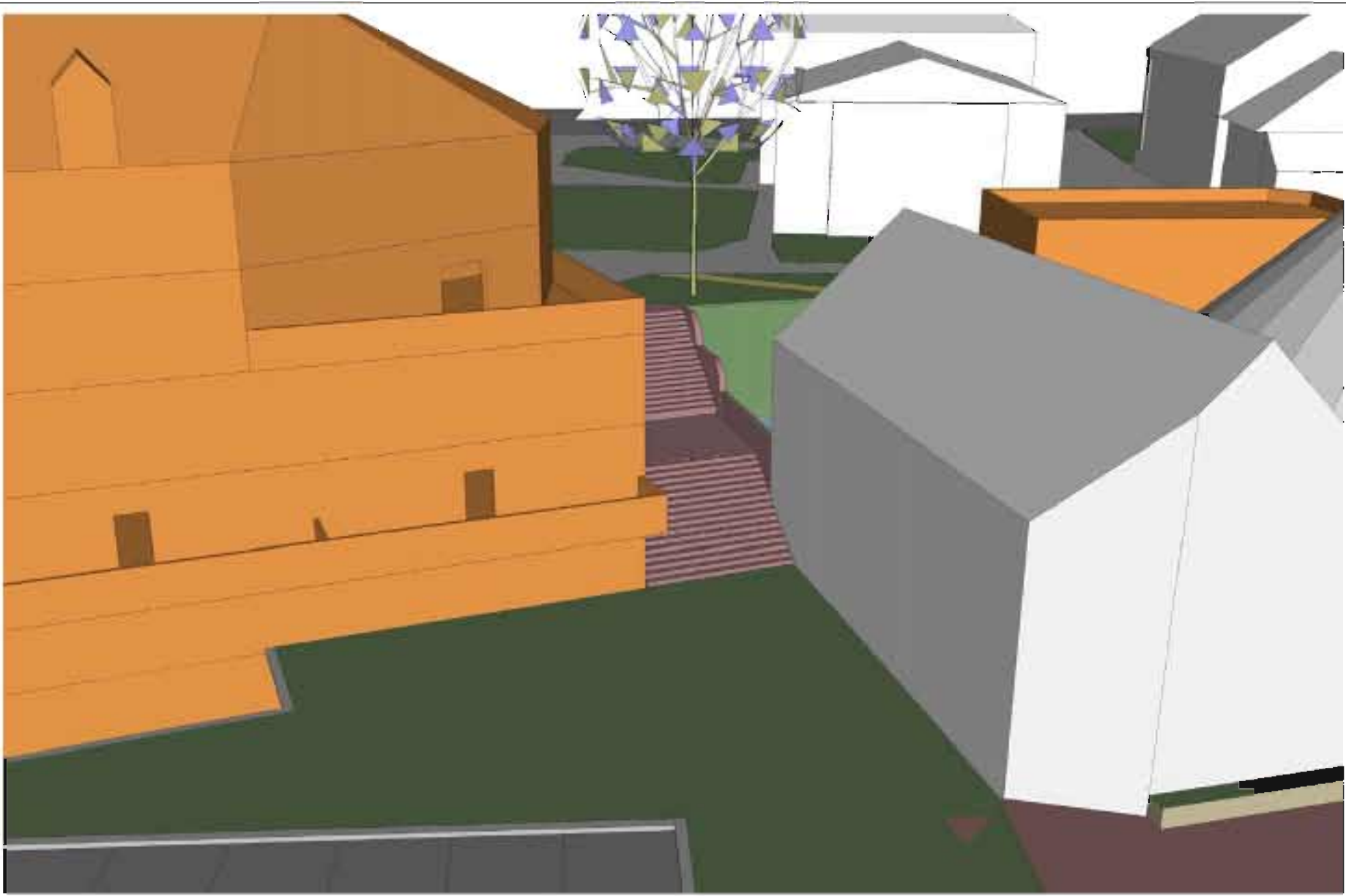


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|------|-------------------|
| 1    | 2/2/23            |
| 2    | 5/1/24            |
| 3    | NTB               |
| 4    | Current Scheme 12 |
| 5    |                   |

**SCHEME 12  
SITE PLAN**

**A.12.1**  
Drawing No.

**1 SITE PLAN**  
A.12.1 SCALE: 1" = 30'



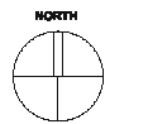
**MILL RIVER  
DEVELOPMENT  
STUDY**

Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Walter Paden  
410-867-0088

**Ford  
Gillen  
Architects, LLC**

408 Main Street  
Northampton, MA 01060  
Tel: 415-865-0000  
Fax: 415-865-0000  
e-mail: fgm@fordgillen.com



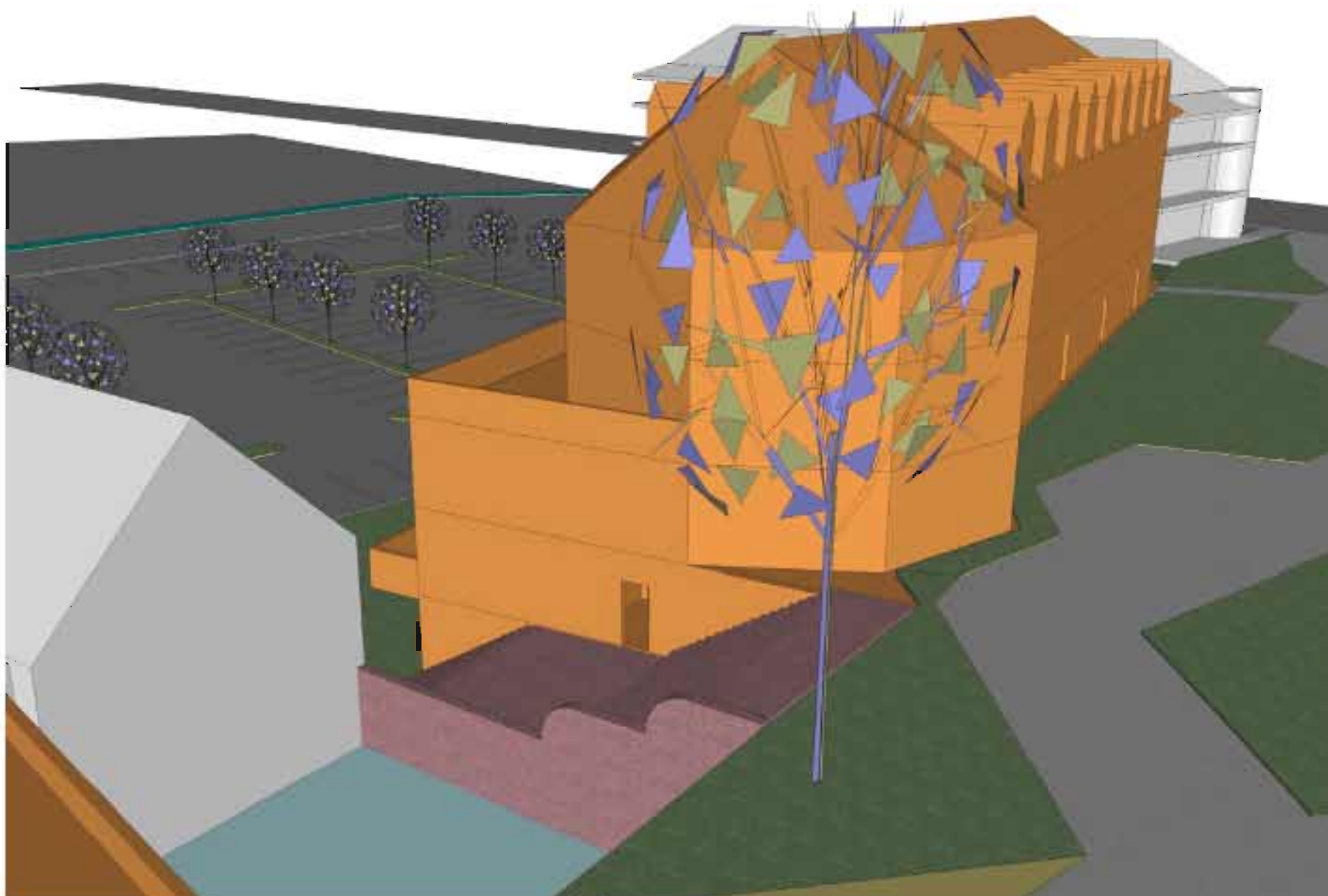
| Rev. | Date     |
|------|----------|
| 1    | 08/08    |
| 2    | 07/20/04 |
| 3    | NTB      |
| 4    | 08/08/08 |
| 5    | 08/08/08 |

SCHEME 12  
MODEL

**1**  
**A.12.2** MODEL: VIEW FROM PARKING LOT  
NTB

**A.12.2**  
Drawing No.





1  
A.12.3  
NTS

MODEL: VIEW FROM PULASKI PARK

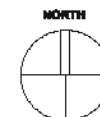
# MILL RIVER DEVELOPMENT STUDY

Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Wesley Pridemore  
4/20/07-2007

Ford  
Gillen  
Architects, Inc.

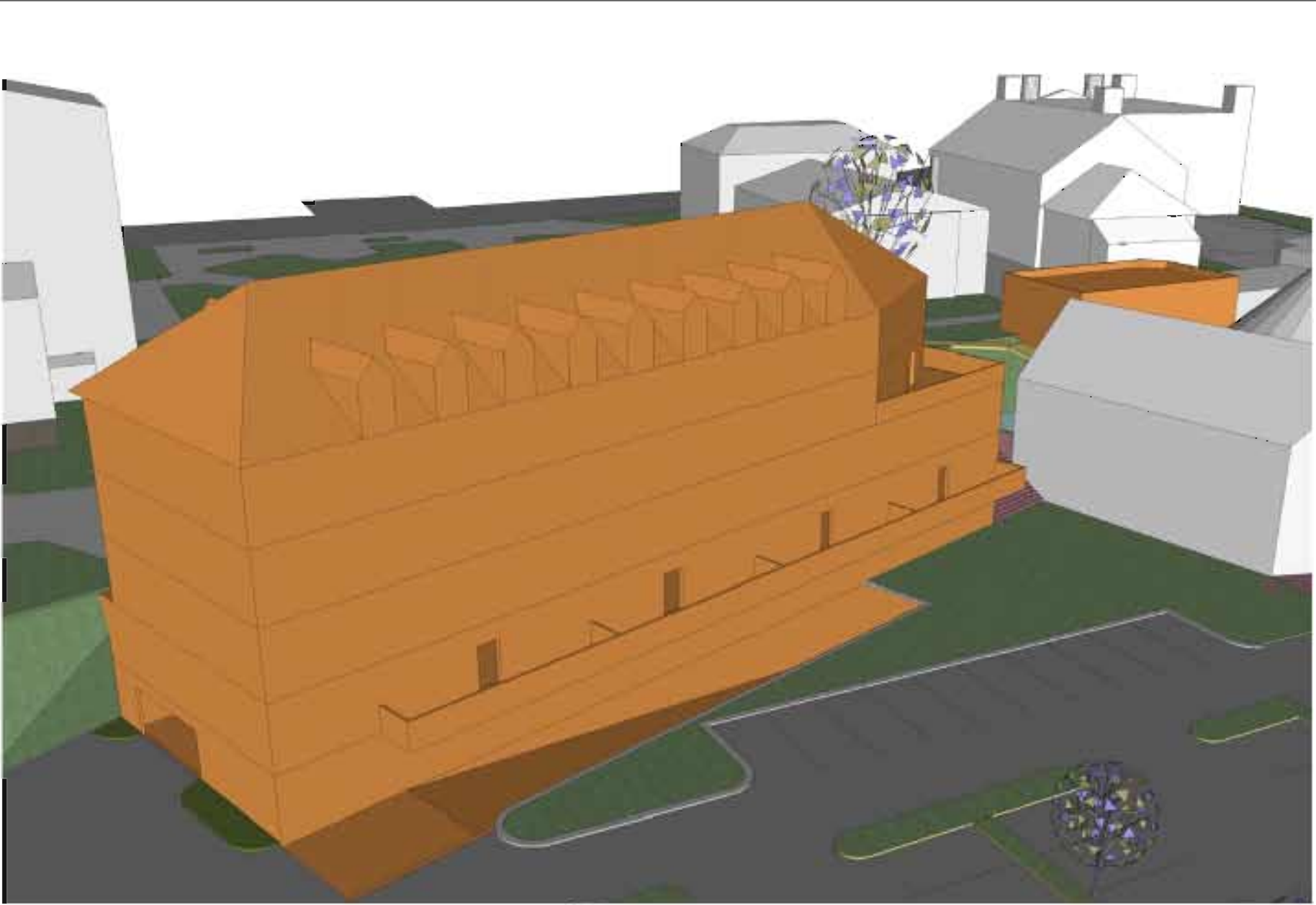
408 Main Street  
Northampton, MA 01002  
Tel: 413-253-2020  
Fax: 413-253-1805  
e-mail: fgillen@fordgillen.com



| Rev.    | Date             |
|---------|------------------|
| Job No. | 2007             |
| Drawn   | 07/08/07         |
| Check   | 07/08/07         |
| File    | C:\miller\A.12.3 |

SCHEME 12  
MODEL

A.12.3  
Drawing No.



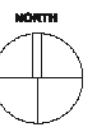
**MILL RIVER  
DEVELOPMENT  
STUDY**

Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Wesley Padden  
410-867-1200

**Ford  
Gillen  
Architects, Inc.**

428 Main Street  
Northampton, MA 01002  
Tel: 410-203-2020  
Fax: 410-203-1805  
e-mail: fgord@fordgillen.com



| Rev.    | Date          |
|---------|---------------|
| Job No. | 2025          |
| Date    | 01/09/2025    |
| Scale   | 1/8" = 1'-0"  |
| File    | Consulting 12 |
| Title   |               |

**SCHEME 12  
MODEL**

**1**  
**A.12.4**  
**MODEL: VIEW FROM RTE 10 BRIDGE**  
NTS

**A.12.4**  
Drawing No.



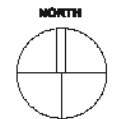
# MILL RIVER DEVELOPMENT STUDY

Northampton, MA

Owner  
City of Northampton  
Director of Planning  
Wesley Padden  
410-267-1200

Ford  
Gillen  
Architects, Inc.

408 Main Street  
Northampton, MA 01002  
Tel: 410-267-1200  
Fax: 410-267-1200  
e-mail: fgord@gillengillen.com



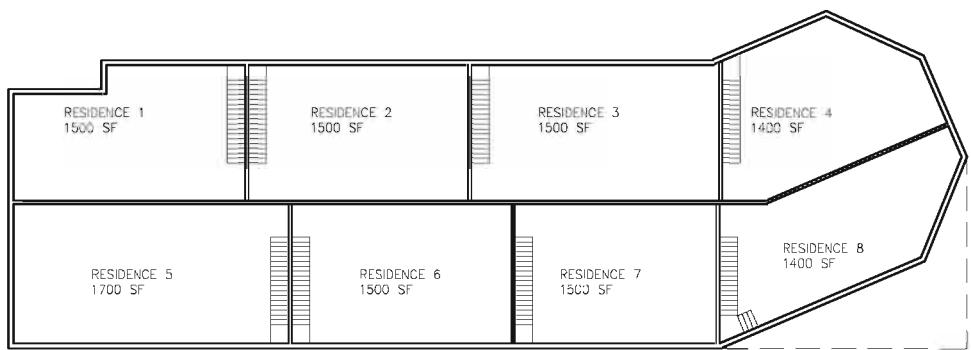
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|------|---------|
| 1    | 2023    |
| 2    | 01/2024 |
| 3    | 03/24   |
| 4    | 05/2024 |

SCHEME 12  
MODEL

1  
A.12.5  
MODEL: OVERHEAD VIEW  
NTS

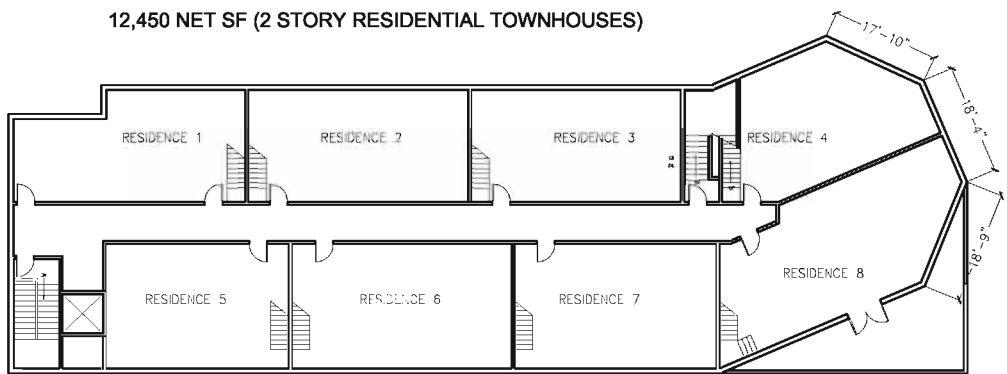
A.12.5  
Drawing No.

6  
A.12.6  
SECOND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF

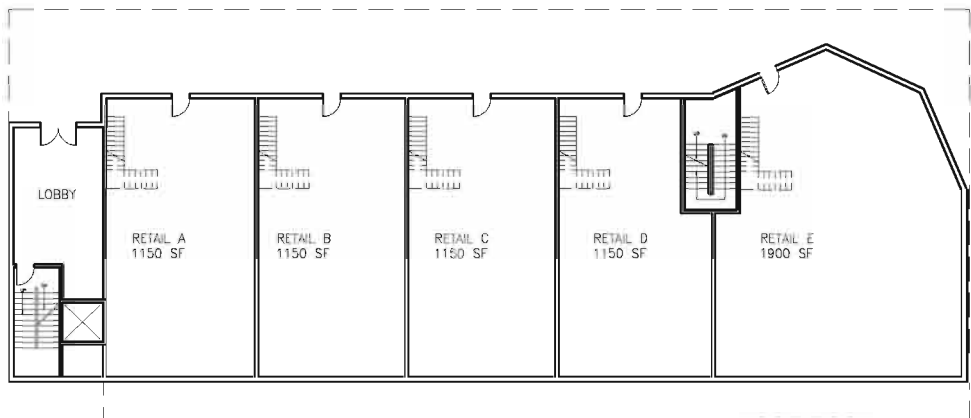


12,450 NET SF (2 STORY RESIDENTIAL TOWNHOUSES)

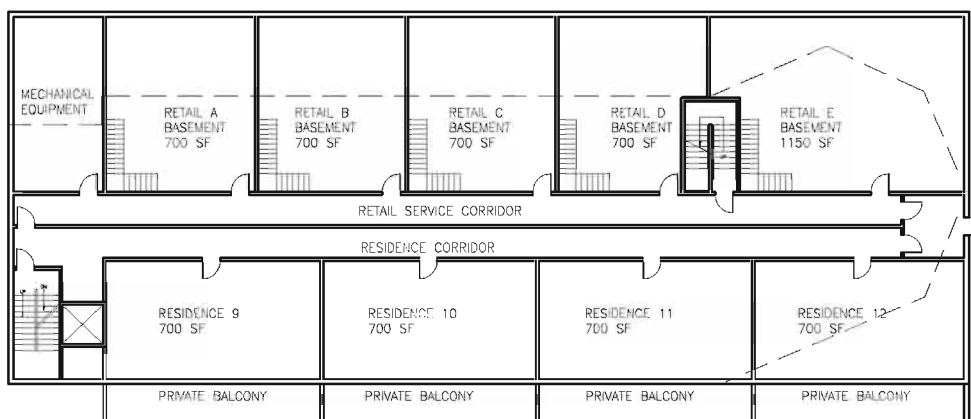
5  
A.12.6  
FIRST FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF



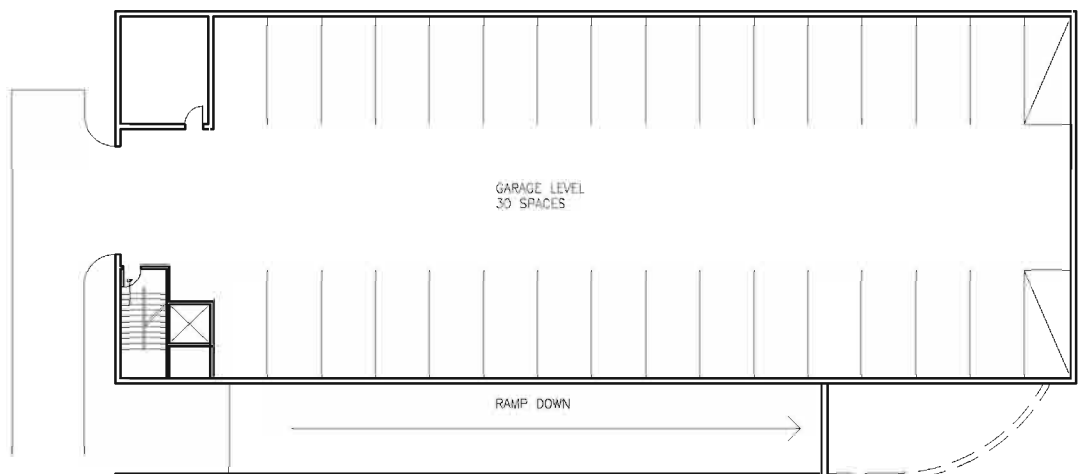
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A.12.6  
GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
7300 GROSS SF  
6100 NET SF



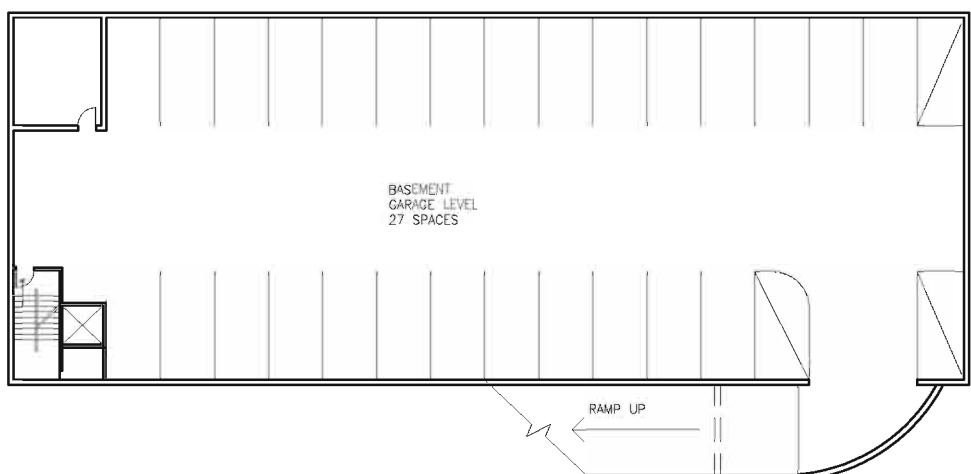
3  
A.12.6  
SUB GROUND FLOOR PLAN  
SCALE 1/32" = 1'-0"  
9626 GROSS SF  
3950 NET SF (RETAIL BASEMENT)  
2800 NET SF (RESIDENTIAL)  
(+ 850 SF BALCONY)



2  
A.12.6  
ROUNDHOUSE PARKING LEVEL  
SCALE 1/32" = 1'-0"  
9626 GROSS SF



1  
A.12.6  
BASEMENT PARKING LEVEL  
SCALE 1/32" = 1'-0"  
9626 GROSS SF





## Scheme 12 Proforma

### ASSUMPTIONS

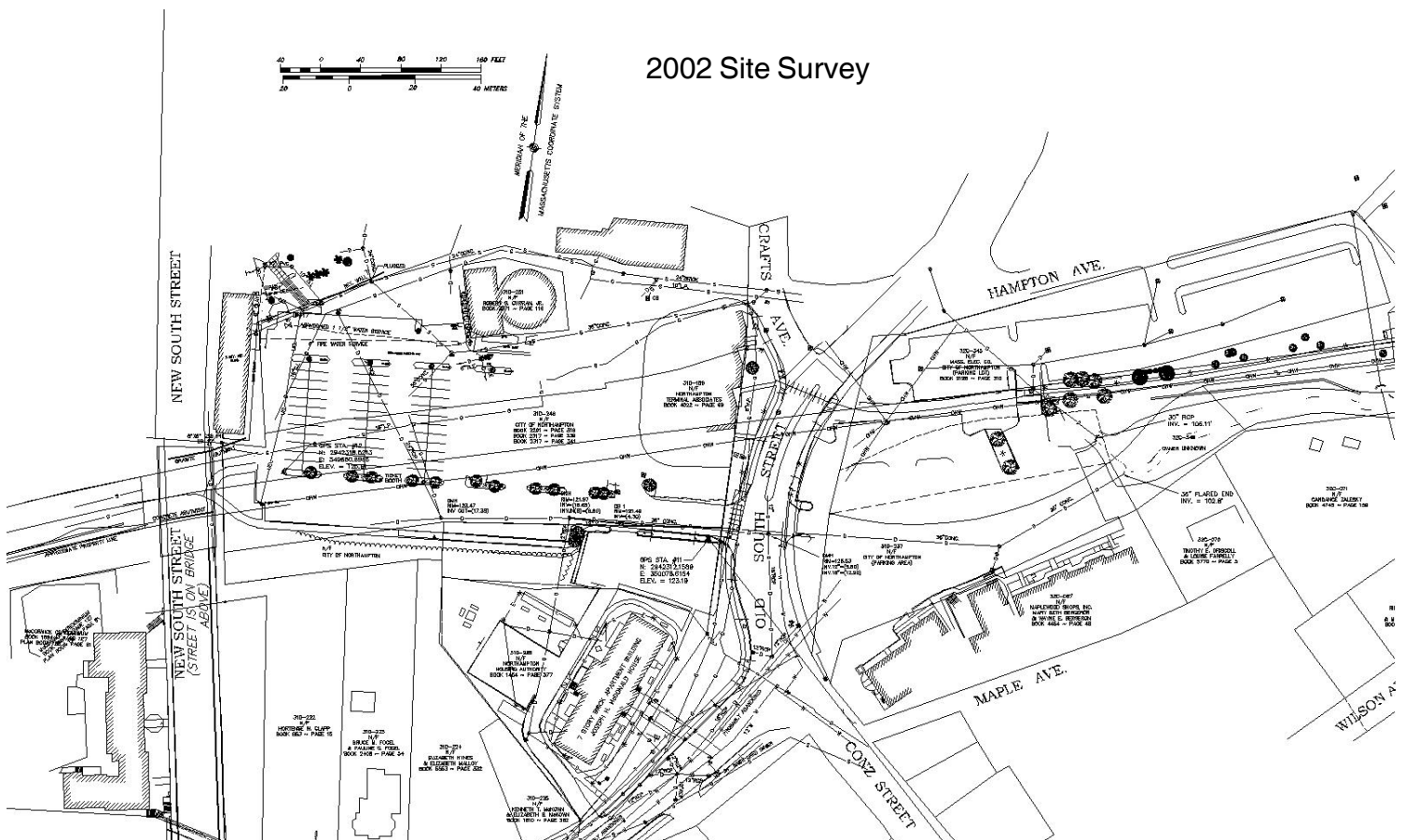
1. gross area of the building: 50,752 gsf
2. number of floors: 6 : 3 above park level, 3 below park level.
3. 12 dwelling units : 8@1400+, 4@850= 15,480 nsf
4. 7,000 net sf of retail space divided into 5 retail spaces 4@ 1150 sf  
1 @ 1540 sf on main floor (not including basement)
5. 50 cars provided - 26 required. 24 extra
6. one elevator - 2 stairways
7. construction type: 2a or 2b non combustible construction
8. fully sprinklered
9. residential finished floor area: (gross) 19,000 gsf including corridors
10. garage area: 19,200 gsf

### COSTS

1. Construction Cost residential all fitted out: 19,000 sf @\$175=\$3,325,000 (includes corridors)
2. Retail: 7000 sf @ \$150= \$1,050,000 (includes corridors). Retail cellar: 5,234 sf @\$60=\$315,000
3. Garage: 9000 sf @ \$50= \$450,000 (\$15,000 PER SPACE) garage basement and ramp: \$500,000  
(additional 20 spaces @ \$25,000/space)
4. Balconies 1 Floor : 2000 gsf @ \$40sf = \$80,000
5. Total Construction Cost= \$5,720,000 This includes garage/ramp and unfinished retail cellar space.
6. Soft Costs Total = \$686,376  
Soft Cost Breakdown: taxes during construction - = 0  
construction loan interest including time for sales: 1 full year of project cost @ 6% interest: \$360,000  
arch/engineering @ 5% construction cost= \$286,000  
utilities during sales period = \$25,376 (.50/sf one heating season)
7. Total project cost (no land cost) \$6,406,376,000. Total development cost is \$126.23/sf  
NOTE GROSS SF INCLUDES "CELLARS FOR RETAIL"

### INCOME FROM SALES

- Condo prices: 4@725 = \$300,000 including garage, flat. with private balconies  
8@1400+= \$400,000 including garage, duplex  
Gross residential sales: \$4,400,000
1. 14 condos.. NET SALES AFTER 5% COMM: \$4,180,000
  2. 30 garage spaces. (1/500gross sq ft) and one to each condo.  
Sell 24 extra spaces @\$20,000 = \$547,000 net
  3. SELL RETAIL SPACE(DOES NOT INCLUDE "CELLAR SPACE" IN AREA CALCULATION):  
7,000 sf subdivided to 7 retail spaces = 1200 sf +2 garage spaces @ \$310,000  
1 @1400 sf +2 spaces = \$360,000 total retail space sales= \$2,530,000 :less 5%=\$2,404,000
  4. TOTAL NET SALES: \$7,131,200 (after commissions)
  5. TOTAL NET SALES LESS TOTAL DEVELOPMENT COST \$724,824 Note: no land cost is included.



## Site Description: Features



OLD SOUTH ST

SITE

The photo above shows the current area under study. In considering development options for the area east of Old South Street, the following features have been considered:

**BUILDING MASSING:** proposed building scaled for commercial/residential, with 40'-50' depth to accommodate parking on first level as well, or a minimum of 25' deep for buildings without parking. Where long continuous blocks are indicated, the idea would be to have 'implied' variety, building fronts to mimic the scale of the rest of town.

**BIKE PATH:** to continue the existing path where it terminates on Hampton Ave. and to continue across Old South Street under New South Street as part of the Mill River Development Plan.

**PEDESTRIAN PATHS:** distinguishing sidewalks and/or open spaces related to proposed massing and other features such as bike path, river development with pavers, distinctive material, and trees.

**PARKING:** parking is considered an integral component to all proposed schemes, options could all accommodate grade level, 2 story deck, or garage building.

**OPEN SPACE:** the character of open space is determined by adjacent uses, considered here is vehicular, pedestrian, recreational (bike path, river), residential, or commercial (outdoor cafes etc...).

**PHASING:** each option could be phased to accommodate market demand or infill over time, variety is then 'real', not 'implied'.

MILL RIVER STUDY PHASE II  
Existing SITE Photos



View looking north toward Main  
Street, back of City Hall



View from Roundhouse Plaza  
looking south at Maplewood  
shops



View looking northeast up Old  
South Street



## Option A: 'Gateways'

The massing idea is to 'complete the edges' along Old South Main Street and Hampton Avenue with 2-4 story buildings of varying width and depth to form a continuous edge similar to Main Street. "Gates" are indicated through these blocks for vehicular, pedestrian, and bike path continuation. The bike path is integrated with both vehicular and pedestrian traffic and is shown crossing Old South Street as currently planned. The Mill River is also shown extended across Old South Street and then following alongside the bike path to New South Street.

Parking is proposed in back of these new buildings. The location of the extended bike path and river and the character of this open space will depend on how the parking is designed, whether as a structured garage attached to back of the buildings or as open grade level parking as it is now.

Potential phasing is as indicated by the key below beginning with proposed Scheme 12 development presented in Chapter 5 of this report.



KEY:

EXISTING PHASE I PHASE II PHASE III  
BIKE PATH EXTENSION MILL RIVER EXTENSION

## Option B: 'Plaza'

The massing idea is to create a plaza/open space where Crafts Street and Old South meet, with a continuous curved front along the proposed plaza edge. The first level (of 3-4 story buildings) could be a combination of commercial at the plaza front and parking at the rear with more structured parking above and/or below. A residential lobby could also be located on the plaza front for possible housing above. Corner block infill buildings are also shown facing the proposed 'plaza', at the intersection of Crafts and Old South Streets and adjacent to the current Roundhouse Plaza building.

The extended bike path and Mill River would run along the back edge of the proposed parking in a dedicated pedestrian zone fronting on the current Maplewood shops.

Potential phasing is as indicated by the key below beginning with proposed Scheme 12 development presented in Chapter 5 of this report.



KEY:

EXISTING PHASE I PHASE II PHASE III  
BIKE PATH EXTENSION MILL RIVER EXTENSION



## Option C: 'Roundabout'

A new vehicular roundabout is created where Crafts, Old South and Hampton meet. Proposed new buildings curve to define the edge of the roundabout in scale with adjacent buildings (3-4 stories). New parking is located along Hampton Avenue, shown as sixty feet deep, which could be either ground level open parking or a new structured garage. A third building type is a proposed residential 'tower' (6-8 stories) marking the edge between 'residential' and downtown 'business'.

The extended bike path and Mill River would run along the back edge of the proposed buildings in a dedicated pedestrian zone or park fronting on the current Maplewood shops. The bike path is shown making a passage through the proposed buildings and following the roundabout. Similarly, the Mill River extension is shown together with a pedestrian passage through the buildings and across Old South Street.

Potential phasing is as indicated by the key below beginning with proposed Scheme 12 development presented in Chapter 5 of this report.



KEY:

EXISTING PHASE I PHASE II PHASE III  
BIKE PATH EXTENSION MILL RIVER EXTENSION

# Weber Engineering Associates, LLC

October 31, 2003

Ms Kathleen Ford  
Ford Gillen Architects  
409 Main St.  
Amherst, MA 01002-2364

Re: Preliminary Geotechnical Engineering Letter  
Roundhouse Study  
Northampton, Massachusetts  
Project 03537

Dear Ms Ford:

We are pleased to submit this letter summarizing preliminary findings with respect to developing two buildings at the proposed site in Northampton, Massachusetts. The objective of this letter is to provide preliminary subsurface information for those interested in developing the site. This work was conducted in accordance with our proposal dated June 11, 2003.

## BACKGROUND

The City of Northampton has proposed allowing private development along a parcel of land formerly owned by the Northampton Gas Works and now occupied by a City parking lot. The general site is contaminated and environmental studies have been conducted by Woodard & Curran. According to information provided to us, over 100-years ago the Mill River had been diverted off the site as part of a flood control project. The sloped parcel along which the development will be located had been part of the riverbank.

The proposed development includes both a 5-story and a 2-story structure located within the sloped embankment along the north end of the site. The proposed location of the two structures is shown on the attached Exploration Location Plan for the Roundhouse Study as provided to us. Figure 1 shows the approximate location of the proposed structures on site while Figure 2 shows a cross section of each structure within the embankment. The embankment is approximately 20-ft high.

## GEOTECHNICAL ISSUES

We expect that development at this site will encompass the following considerations.

1. The subsurface exploration conducted for this preliminary study including the environmental explorations does not provide sufficient information for foundation design, earthwork and

detailed geotechnical recommendations. Therefore the selected developer must engage a geotechnical consultant to conduct a detailed subsurface exploration program for the proposed development.

2. The developer must consider the affect that any contamination in the subsurface environment might have with respect to earthwork and foundation alternatives. This preliminary letter makes no attempt to address potential environmental issues.
3. Constructing the foundations and the buildings, as envisioned, will required excavating into the existing sloped embankment. This presents three issues.
  - a. Constructing adequate bracing methods to support the sides of the excavation. Since the depth of cut into the hillside is at least 20-ft, multi-level supports such as tiebacks or internal bracing will be required.
  - b. Protecting the integrity of adjacent structures such as, but not limited to, Roundhouse, City Hall Annex and Memorial Hall must be considered and made part of the excavation plan. Typically, this level of construction will require monitoring the excavation and adjacent structures for movement.
  - c. Considering long-term stability of slopes within the constructed area.
4. The developer's geotechnical consultant must develop feasible foundation alternatives based on the actual subsurface conditions.

## **SUBSURFACE EXPLORATIONS**

Environmental Drilling Inc. of Sterling, Massachusetts working for Woodard-Curran conducted one soil test boring at the approximate location shown in Figure 1, Exploration Location Plan on October 13, 2003. The location was confined to the lower level parking area since it was not feasible to take the boring along the crest of the slope or along the slope because of access and land ownership. Boring WC-31 extended to a depth of 33-ft below ground surface (BGS) where it was terminated. A representative of Woodard & Curran, Inc. observed the exploration program and prepared the attached log.

Samples of soil were retrieved at continuous intervals to a depth of 27-ft BGS where refusal with the spilt spoon sampler was encountered. Thereafter, the borehole continued to a depth of 33-ft BGS using roller bit methods where the borehole was terminated. Samples were retrieved and classified by a representative of Woodard & Curran. The classification and material descriptions are shown the attached log.

It should be noted that the classification of soil strata shown on the logs is based upon the observer's interpretation of the subsurface conditions. It is possible that there might be thin layers of material lying between the sampling intervals that are not described on the logs, which may not become known until construction. Likewise, the depth to each soil stratum is considered to be approximate and may be more gradual or different in the field. A log of the boring prepared by Woodard & Curran is attached to this letter for reference.



## **SUBSURFACE CONDITIONS**

The subsurface conditions described herein are based upon our interpretation of the materials described on the log. You must be aware that soil conditions can vary between borehole locations and the actual conditions encountered during construction could be different from those indicated by the logs. Although other explorations have been conducted on site for environmental studies, they are insufficient for geotechnical purposes. The borings did not extend to a suitable depth nor were they taken within the proposed footprint of the proposed buildings. Therefore, the study presented herein has been based solely on boring WC-31.

### **Soil**

Soil conditions consist of approximately 11-ft of miscellaneous fill underlain by approximately 16-ft of clay. The clay is in turn underlain by Granodiorite bedrock. The miscellaneous fill consists of loose to medium dense fine to medium or fine to coarse sand with gravel, brick fragments, wood fragments and occasional coal-like material. Although the material is medium dense to a depth of approximately 6-ft, it becomes very loose thereafter to a depth of approximately 11-ft where the material changes to clay. The existing fill is not suitable for supporting a building.

The clay ranges from soft to very stiff throughout the entire 16-ft thick layer. Occasionally the clay has sand layers as indicated from 10.5-ft to 12-ft and again from 19-ft to 21-ft BGS. Apparent bedrock was encountered below a depth of 27-ft. Although a rock core was not taken to obtain a sample, the rock was penetrated with a roller bit to verify its presence.

### **Groundwater**

Groundwater was measured at a depth of 17-ft BGS on October 13, 2003, which lies within the clay layer. It is possible however, that the groundwater level could be higher and perched along the fill / clay interface especially during wet seasons of the year.

The groundwater conditions stated on the logs are applicable to the time when the readings were made. The level of groundwater below the ground surface fluctuates based on conditions such as season, temperature and amount of precipitation that may be different from the time when the observations were made. Therefore, the groundwater levels may be higher or lower during construction and during the life of the structure. This fact should be taken into consideration when preparing foundation design and developing earthwork procedures.

## **FINDINGS**

The findings presented herein reflect our opinions and are based upon our interpretation of the available subsurface information as stated herein along with our understanding of the building configuration and grades. This letter is intended to be preliminary and as such, it might not address all of the issues nor are the findings stated herein suitable for design purposes. The preliminary findings summarized herein must be supplemented by a detailed geotechnical report specific to the project at hand. No warranty, expressed or implied is made.

## **Support of Buildings**

The existing fill, which extends to a depth of 11-ft BGS is not suitable material for supporting a building at this site. Therefore foundation alternatives must extend into or below the underlying clay layer. There are several feasible alternatives for supporting a building at this site.

Pile foundations can be used to support a building especially if there is no basement and there are high concentrated loads. Subsurface conditions are suitable for drilled or driven piles extending through the relatively thin clay layer and bearing on the underlying rock. End bearing piles can be designed to support their structural capacity as opposed to less efficient friction piles bearing in the clay layer. Thus if piles were used, it is likely that they would be end-bearing piles supported along the underlying rock surface. Prestressed-precast concrete piles, steel H piles and drilled small diameter grouted piles provide feasible alternatives.

If the structure provides a basement, it is possible to excavate through the 11-ft of fill and support the building on a mat foundation bearing on the underlying stiff clay or alternatively, on compacted structural fill extending from the stiff clay layer to actual foundation grade. This alternative requires an assessment of settlement potential within the underlying clay. However, since the weight of soil removed when excavating the basement compensates for some if not the entire building load, it is possible that there might be little if any increased pressure in the underlying clay resulting in some degree of settlement. This requires additional study during the design of this project. A disadvantage with this alternative lies with the requirement to provide sufficient lateral support to make the excavation as well as disposal of the excavated material especially if the material is contaminated. Drains will also be required for controlling groundwater conditions around and below the basement section.

Geopiers, rammed aggregate columns, might also be a feasible alternative for supporting a building without removing the entire fill or supporting the building on piles. Geopiers can be used to stabilize the existing fill and increase its bearing capacity. The geopiers are constructed by excavating columns of soil and replacing the material with compacted stone aggregate. This alternative can be attractive since it is likely less expensive than a pile foundation and results in less soil disposal than an excavation or excavate and replace alternative. Disposal of the excavated material must be addressed. Detailed studies are required during the design phase of the project to fully assess this method.

## **Seismic Considerations**

Subsurface conditions beginning at the ground surface of the site consist of loose to medium dense fill underlain by approximately 16-ft of soft to very stiff clay before reaching bedrock at a depth of 33-ft BGS. Based on Table 1612.4.1 of the Massachusetts State Building Code, Sixth Edition it is our opinion that the site has an  $S_3$  site profile, which must be considered during design. Accordingly the recommended seismic coefficient ( $S$ ) for design is 1.5. Given the existing subsurface conditions depicted in the boring log, it is our opinion that the site is not susceptible to liquefaction

## **Lateral Support of Excavations**

A lateral support system designed by a registered professional engineer will be required to support basement excavations especially since construction will extend into the adjacent hillside. Depending upon the depth of the support system must consider the potential for basal heave at the bottom of the excavation. We also expect that a monitoring program will be undertaken to observe and record system performance and protection of adjacent structures.

## **Construction Consideration**

Specific construction considerations have not been addressed. Project specific recommendations would be made as part of a future detailed geotechnical assessment.

We are pleased to have this opportunity to assist. If you have any questions regarding this preliminary letter, please do not hesitate to call.

Very truly yours,

**WEBER ENGINEERING ASSOCIATES, LLC**

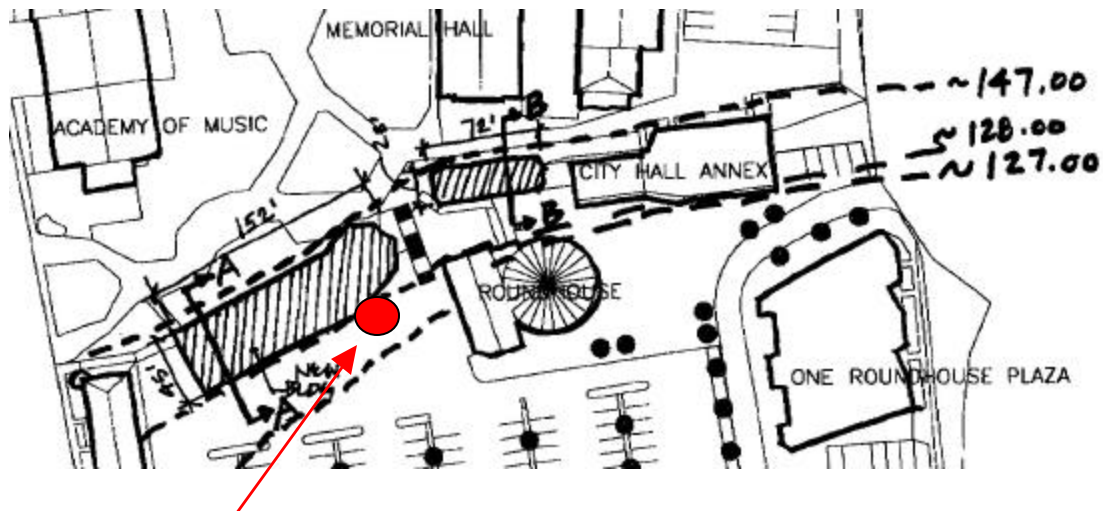


Richard P. Weber, P.E.,  
Manager

Attachments:

Figure 1 - Exploration Location Plan

Figure 2 – Building Section



Approx. Location  
Boring WC-1

Figure 1 – Exploration Location Plan

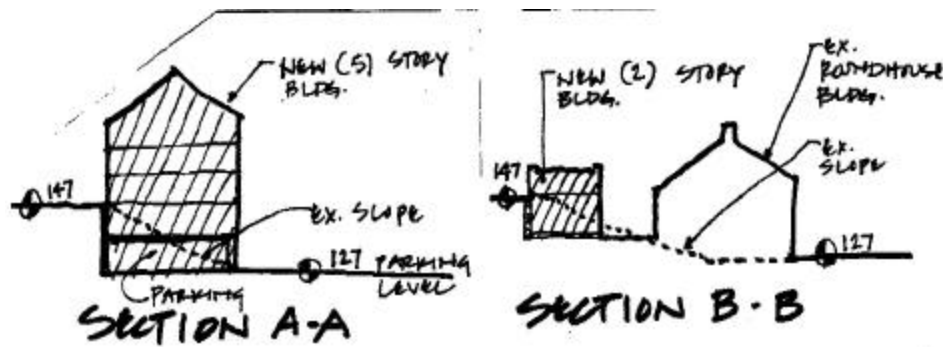


Figure 2 - Section

Notes:


1. Drilling conducted by Environmental Drilling Inc. on October 13, 2003.
2. Location of exploration provided by others and is approximate.
3. Exploration plan adapted from plan provided by Ford Gillen Architects.

Weber Engineering Associates, LLC  
Geotechnical Engineers  
Holliston, Massachusetts

NTS  
October 2003


Exploration Location Plan  
Roundhouse Study  
Northampton, Massachusetts

**DRAFT**

|  <b>WOODARD &amp; CURRAN</b><br>Engineering • Science • Operations<br>980 Washington Street<br>Dedham, Massachusetts 02026  |            |                    |    |    |    | <b>Former Northampton Gas Works</b><br>Northampton, Massachusetts |           |  |                   | <b>WELL No.</b><br>WC-31 |  |   |  |
|---|------------|--------------------|----|----|----|---|-----------|--|-------------------|--------------------------|--|---|--|
| START DATE: October 13, 2003<br>CONTRACTORS: Environmental Drilling Inc.<br>DRILLER:<br>ON SITE REPRESENTATIVE: Chris Miller<br>DRILLING METHOD: Hollow Stem Auger<br>SAMPLING METHOD: Standard Split Spoon |            |                    |    |    |    |   |           |  |                   |                          |  | BORING DEPTH: 26 feet<br>WELL DEPTH: NA<br>RISER LENGTH: NA<br>SCREEN LENGTH: NA<br>SLOT SIZE: NA<br>G.WATER DEPTH: 17 feet |  |
| Depth   | Sample No. | Blows per 6 inches |    |    |    | Rec. Length   | PID (ppm) | Field Description and Remarks  |                   |                          |  | Well Construction   |  |
| 0'  |            | 8                  |    |    |    | 17"   | 3.3       | Dirt parking surface<br>0' - 2'  | No Well Installed |                          |  |   |  |
| 1'  |            |                    | 7  |    |    |   |           | Medium dense, brown, fine to coarse SAND and GRAVEL, poorly sorted with black fine sand, some gravel layer at 1.5' to 2', dry. |                   |                          |  |   |  |
| 2'  |            |                    |    | 6  | 7  |   |           |  |                   |                          |  |   |  |
| 3'  |            | 8                  |    |    |    | 18"   | 3.3       | 2' - 4'<br>Medium dense, black fine to coarse SAND and GRAVEL, with brick fragment, poorly sorted, dry.                        | No Well Installed |                          |  |   |  |
| 4'  |            |                    | 11 |    |    |   |           |  |                   |                          |  |   |  |
| 5'  |            |                    |    | 10 | 10 |   |           |  |                   |                          |  |   |  |
| 6'  |            | 12                 |    |    |    | 10"   | 7.8       | 4' - 6'<br>Loose, black fine to coarse SAND and GRAVEL, wood fragments and coal-like material, dry.                            | No Well Installed |                          |  |   |  |
| 7'  |            |                    | 7  |    |    |   |           |  |                   |                          |  |   |  |
| 8'  |            |                    |    | 3  | 2  |   |           |  |                   |                          |  |   |  |
| 9'  |            | 2                  |    |    |    | 16"   | 7.8       | 6' - 8'<br>Very loose, brown fine to medium SAND, moderately sorted with white and black sand and gravel layer from 7' to 8'.  | No Well Installed |                          |  |   |  |
| 10'   |            |                    | 1  |    |    |   |           |  |                   |                          |  |   |  |
| 11'   |            |                    |    | 1  | 1  |   |           |  |                   |                          |  |   |  |
| 12'   |            | 1                  |    |    |    | 18"   | 13.6      | 8' - 10'<br>Very loose, brown, fine to medium SAND, dry.   | No Well Installed |                          |  |   |  |
| 13'   |            |                    | 1  |    |    |   |           |  |                   |                          |  |   |  |
| 14'   |            |                    |    | 1  | WR |   |           |  |                   |                          |  |   |  |
| 15'   |            | WR                 |    |    |    | 17"   | 13.8      | 10' - 10.5'<br>Very loose, brown, medium to fine SAND, dry.  | No Well Installed |                          |  |   |  |
| 16'   |            |                    | WR |    |    |   |           |  |                   |                          |  |   |  |
| 17'   |            |                    |    | 3  | 3  |   |           |  |                   |                          |  |   |  |
| 18'   |            | 5                  |    |    |    | 21"   | 15.3      | 10.5' to 12'<br>Soft, gray CLAY with interbedded fine sand, well sorted.   | No Well Installed |                          |  |   |  |
| 19'   |            |                    | 7  |    |    |   |           |  |                   |                          |  |   |  |
| 20'   |            |                    |    | 7  | 5  |   |           |  |                   |                          |  |   |  |
| 21'   |            |                    |    | 3  |    | 8"  | 1.8       | 12' - 14'<br>Stiff, gray CLAY, well sorted, dry.   | No Well Installed |                          |  |   |  |
| 22'   |            |                    |    |    |    |   |           |  |                   |                          |  |   |  |
| 23'   |            |                    |    | 2  |    |   |           |  |                   |                          |  |   |  |
| 24'   |            | 2                  |    |    |    | 14"   | 4.6       | 14' - 15'<br>Medium stiff, gray CLAY.  | No Well Installed |                          |  |   |  |
| 25'   |            |                    | 2  |    |    |   |           |  |                   |                          |  |   |  |
| 26'   |            |                    |    | 2  |    |   |           |  |                   |                          |  |   |  |
| 27'   |            | 3                  |    |    |    | 16"   | 1.8       | 15' - 17'<br>Soft, gray CLAY, well sorted.   | No Well Installed |                          |  |   |  |
| 28'   |            |                    | 2  |    |    |   |           |  |                   |                          |  |   |  |
| 29'   |            |                    |    | 2  | 3  |   |           |  |                   |                          |  |   |  |



***DRAFT***

| <div>WOODARD &amp; CURRAN</div> <div>Engineering • Science • Operations</div> <div>980 Washington Street</div> <div>Dedham, Massachusetts 02026</div> |  |                    |    |   |    | <div>Former Northampton Gas Works</div> <div>Northampton, Massachusetts</div> |     | <div>WELL No.</div> <div>WC-31</div>  |            |
|---|--|--------------------|----|---|----|---|-----|---|------------|
| 20'   |  | 2                  |    |   |    | 24"   | 2.6 | 19' - 21'   | CL         |
|   |  |                    | 3  |   |    |   |     | Medium stiff, gray CLAY with 2-inch brown fine SAND layer at 20.5'.                       |            |
|   |  |                    |    | 3 |    |   |     |   |            |
| 21'   |  |                    |    |   | 4  | 24"   | 2.6 | 21' - 23'   | CL         |
|   |  | 3                  |    |   |    |   |     | Medium stiff, gray CLAY.  |            |
|   |  |                    |    | 3 |    |   |     |   |            |
| 22'   |  |                    | 4  |   |    | 0"  | NA  | 23' - 25'   | CL         |
|   |  |                    |    | 3 |    |   |     | No recovery.  |            |
|   |  |                    |    |   | 3  |   |     |   |            |
| 23'   |  |                    |    |   | 3  | 0"  | NA  |   | CL         |
|   |  | 3                  |    |   |    |   |     |   |            |
|   |  |                    | 3  |   |    |   |     |   |            |
| 24'   |  |                    |    | 3 |    | 0"  | NA  |   | CL         |
|   |  |                    |    |   | 6  |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 25'   |  |                    |    |   | 10 | 24"   | 4.1 | 25' - 26'   | LACUSTRINE |
|   |  | 17                 |    |   |    |   |     | Very stiff, gray CLAY   |            |
|   |  |                    | 15 |   |    |   |     | 26' - 27'   |            |
| 26'   |  |                    |    |   | 12 | 24"   | 4.1 | likely WEATHERED BEDROCK  |            |
|   |  |                    |    |   |    |   |     | Medium dense, brown, fine to coarse SAND and GRAVEL                                       |            |
|   |  |                    |    |   | 10 |   |     |   |            |
| 27'   |  |                    |    |   | 10 | 1"  | NA  | 27' - 27.1'   | BEDROCK    |
|   |  | ### (for 2 inches) |    |   |    |   |     | Very dense, white, black, and gray GRANODIORITE   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 28'   |  |                    |    |   |    | 1"  | NA  |   | BEDROCK    |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 29'   |  |                    |    |   |    | 1"  | NA  |   | BEDROCK    |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 30'   |  |                    |    |   |    | 1"  | NA  |   | BEDROCK    |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 31'   |  |                    |    |   |    | 1"  | NA  |   | BEDROCK    |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 32'   |  |                    |    |   |    | 1"  | NA  |   | BEDROCK    |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 33'   |  |                    |    |   |    | 0"  | NA  | 33" - 33.1  | BEDROCK    |
|   |  | ### (for 0 inches) |    |   |    |   |     | No recovery - refusal   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 34'   |  |                    |    |   |    | 0"  | NA  | Bottom of Exploration at 33 feet below ground surface.                                    |            |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 35'   |  |                    |    |   |    | 0"  | NA  | Drilling Process:   |            |
|   |  |                    |    |   |    |   |     | - Hollow stem auger to 10 feet below ground surface                                       |            |
|   |  |                    |    |   |    |   |     | - Advanced 5-inch diameter casing to 12.5 feet below ground surface to seal fill material |            |
| 36'   |  |                    |    |   |    | 0"  | NA  | - Advanced 4-inch diameter casing to 27 feet below ground surface.                        |            |
|   |  |                    |    |   |    |   |     | - Advanced roller bit to 33 feet below ground surface                                     |            |
|   |  |                    |    |   |    |   |     |   |            |
| 37'   |  |                    |    |   |    | 0"  | NA  |   |            |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 38'   |  |                    |    |   |    | 0"  | NA  |   |            |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 39'   |  |                    |    |   |    | 0"  | NA  |   |            |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |
| 40'   |  |                    |    |   |    | 0"  | NA  |   |            |
|   |  |                    |    |   |    |   |     |   |            |
|   |  |                    |    |   |    |   |     |   |            |